

Breaking barriers
through play



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Policy Guidelines and a Technical Manual for
Making Play Spaces Inclusive

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Schools and special education centres who regularly bring their children to the Inclusive Playspaces

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“Play is the only way the highest intelligence of humankind can unfold,” said the famous American author Joseph Chilton Pearce. No one can deny the need for inclusiveness of play and play spaces.

This manual for creating inclusive play spaces by Kilikili is a pioneering effort towards creating inclusive play spaces in India, offering a real possibility that the rights of children with disabilities for play get realized. Created through their direct experience of making public play spaces inclusive, this manual is rich in terms of following a participative process to arrive at ideas of what an inclusive space ought to be, as well as in its technical design ideas and specifications for suitable play equipment.

While the Bengaluru Mahanagara Palike has been the first to officially support creation of inclusive play spaces along with Kilikili, the need for such initiatives is widespread in all parts of India. It is my ardent hope that this manual is used by local government agencies all over the country to create more such inclusive play spaces, thereby enabling children with disabilities to enjoy playing and mingling with their typical peers.

Mukesh Jain

Joint Secretary
Department of Empowerment of Persons with Disabilities
Ministry of Social Justice and Empowerment
Government of India

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Play is not only a child's right; it is a legitimate developmental need. The lack of adequate play spaces for all children is an unfortunate reality of our cities today. When it comes to children with disabilities, the lack of inclusive play spaces is not only a gross violation of the child's right to play freely alongside their typically growing peers, but is also reflective of how indifferent we are, as a community and society, to the needs of children with disabilities.

The emergence of Kilikili

Kilikili was initiated in 2006, a response to a simple question posed by a parent – *Why don't we see children with disabilities in a public play space?* We realized this is so, partly because of the lack of facilities that would enable children to first enter a play space and then engage in active play. Kilikili thus began, with the mission of developing Inclusive Public Play spaces in Bengaluru, that would enable children with disabilities secure their right to play alongside other children, in spaces where other children play.

The partnership with Municipal Corporations and community organizations

Kilikili brings together two sets of stakeholders- the local Municipal Corporation on the one hand and parents, volunteers, disability rights organizations, citizens' groups, residents' associations, special and regular schools, on the other- all united in ensuring inclusive play spaces that children with and without disabilities can together use.

The BBMP initiative – a pioneer among all Municipal Corporations in India

The partnership between the Municipal Corporation – Bruhat Bengaluru Municipal Corporation (BBMP) and Kilikili has led to the development of inclusive play spaces in three public parks in the

following zones in Bengaluru:

- East Zone - Coles Park, Fraser Town
- West Zone - Gayatri Devi Park, Rajajinagar
- South Zone - M. N. Krishna Rao Park, Basavangudi

While it is not without challenges (the most critical of which is proper maintenance), and the dream of full inclusivity is yet to be attained, it has been heartening to find a local city government showing keenness and commitment to making city play spaces inclusive. Inputs for the design of these play spaces and play equipment were offered by Kilikili in consultation with children, parents, rehabilitation therapists, architects and urban planners.

Spreading to other cities

Inspired by the Bengaluru initiatives, a parents' group in Mumbai, Hope Foundation worked to make a play space in a residential colony welcoming of children of all abilities. A proactive civic group in Mangalore, Gandhinagar Park Trust, petitioned the Mangalore Municipal Corporation while ESAF, an NGO working to make cities child-friendly, worked with the Nagpur Municipal Corporation to render public play spaces inclusive.

Creating such spaces does not require any additional financial resources

All the play spaces in the 3 parks in Bengaluru have been made inclusive using existing Municipal Corporation budgets. We have been pleasantly surprised by the willingness with which both the government and civil society groups buy into the idea of an inclusive play space.

What is challenging however, is to translate this desire to actual creation of such spaces which is impeded by various operational issues. We also realized that for the Corporation, these are 'special projects' that were completed because of strong administrative will of the officials, but are not institutionalized as part of the way in which a local city government develops its play spaces.

The need for institutionalising inclusion in play space development

The above, coupled with the requests Kilikili has been getting from Municipal Corporations, civil society organizations, residents' associations etc. to help them develop inclusive play spaces,

prompted us to work on a comprehensive set of guidelines, based on our experience.

We also realized that presenting guidelines as a Wish list will not ensure that such spaces get created unless also accompanied by a 'How-To'- a Manual that will help those interested through the process of the actual development of an Inclusive Play Space. This effort has resulted in the document you are now reading.

The articulations of children and their caregivers form the basis on which the guidelines and manual have been developed. These are collated in the first section - **Children's Voices**, to offer an understanding of the aspiration that must serve as the foundation for the creation of any inclusive play space.

The second section consists of the **Guidelines** to be followed while developing an Inclusive Play space.

The last section is a **Technical Manual** that highlights the developmental importance of each play equipment/space along with the specifications for developing the equipment/space.

We do not see these specifications as the only way in which inclusivity can be built

Rather, they are indicative and by no means exhaustive, meant to stimulate fresh thoughts and ideas, allowing immense scope for innovation and creativity from those interested in developing inclusive play spaces.

We encourage you to use any of the ideas mentioned in this document. We hope our endeavour inspires communities of children, parents' groups, schools, residents' associations, corporate organizations on the one hand and Municipal Corporations and other government agencies on the other to initiate the development of innovative, inclusive play spaces ensuring that all children, without any discrimination, enjoy their fundamental right to play.

Kavitha Krishnamoorthy

Managing Trustee
On behalf of the Kilikili team

As adults, we often think we know best or that we always act in the best interests of children. This manifests as making decisions for children, overlooking their opinions on their needs and aspirations. Children's understanding and experience, however, offers a unique perspective of their situation that is important to consider when making decisions for them. Listening to children entails not only hearing them out but also respecting their opinions and acting upon them. We owe our children this, not as a favour, but because it is their right to be heard and to have their views respected.

From December 2005 to January 2010, Kilikili engaged with over 200 children with disabilities and 50 children without disabilities in the age group of 6-18 years, and their caregivers to understand from them their aspirations and vision for an Inclusive Play Space. While the initial consultations viewed specific parks that were being considered for making play spaces inclusive, the last consultation in January 2010 brought together children from varied socio-economic backgrounds and neighbourhoods across the city. The purpose of this engagement was to discuss and debate children's experiences in existing public play spaces, and hear their recommendations for the development and maintenance of such spaces in the city, in the future.

The different consultations served as a unique forum that brought together children with and without disabilities and adults [parents, teachers, NGO activists and representatives of the City Municipal Corporation (BBMP)] on a single platform to listen, share and exchange thoughts and ideas. Through drawing, role play, clay modelling, songs, discussion and debate, children were facilitated to present their ideas for inclusive play spaces.

A collation of the children's opinions and aspirations, garnered from across the consultations is presented here, grouped under the following themes.

Children play to learn and interact with the world around them. They play to have fun, to explore, give wing to their curiosity. They play to make friends, to understand similarity and difference and to unravel the clenched and the hidden parts of themselves.

It was interesting to note that across all ages and abilities, children shared common reasons to visit a park:

Have fun, and not do anything in particular

Play outdoor group games (structured and unstructured)

Make new friends

'Feel' the open space – walk, run or play.

Let's Play!

But first, listen to what we have to say...

We need parks to play,

We need parks to play,

We need homes, we need parks.

Near our homes, a small park,

All over our country, we need parks.

With trees, birds, flowers,

We need parks to play.

-A Song on Parks

(by children, facilitated by Kilikili)

2. Difficulties faced in present-day parks

Materials

If there is too much grass, both walking and wheelchair use become difficult for us

Stones on the ground hurt our feet, especially when we cannot see them or if we are unaware

Layout

Scattered trees tend to disorient us and we get hurt

Too many steps everywhere are difficult to navigate

Unnecessary pillars hurt us

Too many potholes or bumps on the paths are inconvenient

Numerous entrance and exit gates make it difficult for us to go to a park alone

Too many undulations on the path make it difficult for us

Play Equipment

If the railings of the slides, jungle gym or climbing ladder are too small, we sometimes fall off

If the see-saw is too steep, we cannot balance or push ourselves

Broken play equipment is unsafe and impossible to use

Others

When parks are far away, we cannot go there easily

Sometimes, parents feel we are wasting our time in the park

Other children don't talk to us because they don't understand us

People litter the park with plastic and paper

When it rains, our play area gets waterlogged

If we use crutches or a wheelchair, moving around in the park is very difficult



3. Children's vision of an ideal park

Layout

Specific paths for wheelchair access around the entire park (water, sand, park, play equipment, toilets, etc.)

A broad entrance to the park, away from parking so that it is safe and easy for us to use

Ramps with railing throughout the park

Non-slippery, even pavements

No steps

Secure fences or walls around park

Signage about various disabilities to sensitise people and create awareness

Handrails all around the pathways

Some grass where we can sit, play or talk to one another, without being scolded

Maintenance

Better maintenance of parks

Greater awareness of existence of inclusive parks in the local media and in buses too

Essentials

Easy-to-maintain toilets near play areas

Trained security personnel, with knowledge of some resources, such as contact details of an ambulance service

Availability of trained volunteers in the park

Availability of extra wheelchairs or prams

Well-lit play areas

Benches

Layout Maps

Bakery /eatery

Drinking water facility

Reading room facility

First Aid Box

Dustbins

Public Address System

Reuse of water so that there is no wastage

Important facilities

Use of colours that are sensitive to low vision

Sound stimulators like music

Signage (tactile and pictorial) for better usage of equipment and to enhance learning

Availability of knee caps for children

Signboard on special equipment to benefit children with disabilities

Colourful equipment

We want a place in our park to sit and rest
- Like a stone bench under an apple tree!
A friendly watchman or none at all!
A ramp to reach the top of the sky!
A park that is in good condition will make me feel good too!
Lots and Lots of friends to play with
Rooms to stay
A boat with a fishing net
A beach to relax!
No restriction regarding presence of parents
No board saying, "only for children below 5 years"
No signs that say, "wheelchair/prams not allowed"



Play Equipment

Sand

3-feet of sand located near the swings, see-saw and other play equipment so that if we fall, the sand prevents us from getting hurt

Slides

Slide with hand rails and raised sides

Low level and wide slides for wheel chairs to slide slowly

Tunnel slides

Swings

Tyre swing

Family swings with bucket seats

Swings with seat belts

Low level swings

Hammocks

Climbing Equipment

Jungle gym

S-shaped monkey ladders, with hand rails

Monkey Bars

Parallel bars with adjustable weight for children to practice walking

Trampoline with hand rails, or some sort of holding support

Rope Ladders

Movement related

Merry-go-round with a platform to enable wheel chairs to move in and out of it

Jumping duck with spring

Bouncy (a play equipment where children can bounce up and down)

Sit and Spin

Toboggan

Large open spaces

Open spaces to run around

Space for games like basketball, badminton, cricket, football, etc.

Skating rink

Running track with cables for children with visual impairment

Others

Maze

Large Abacus

Tunnels

Art activity and display area

Music and musical instruments corner

Natural Environment

Plenty of greenery

Animals like geese, ducks, deer, dogs, rabbits to see and touch

Trees with fruits and a tree house

Plants and lots of flowers

Birds chirping and bird feeders

Fish

Butterflies

POLICY GUIDELINES TO MAKE PUBLIC PLAY SPACES INCLUSIVE

Legal provisions for children with disabilities

The Indian Constitution promises a life of equality and dignity to all, directing State policy to ensure that 'children are given opportunities and facilities to develop in a healthy manner'. Policies such as the National Charter for Children, 2004, the National Policy for Children, 2013, and the National Policy for Persons with Disabilities, 2006, promise that the right of all children to play, recreation and leisure will be protected and promoted by the State and communities. They also promise, to varying degrees, that measures will be undertaken to ensure that equal opportunities are provided to children with disabilities to ensure their inclusion and active participation in all walks of life.

The United Nations Convention on the Rights of the Child, 1989, and the United Nations Convention on the Rights of Persons with Disabilities, 2006, both of which India has ratified, set the standards with which governments have to comply, to ensure that all children, irrespective of ability, class, gender, or other factors, attain their basic right to play. Despite these provisions, several obstacles stand in the way of children with disabilities realising their right to play. Insensitivity to their needs, social discrimination, inaccessible play spaces and play equipment, and untrained park staff members are among the primary reasons for their lack of participation in public play spaces.

Goals of the Policy Guidelines

These guidelines seek to accomplish the following goals:

To institutionalise accessibility and inclusivity in all processes of play space development and maintenance

To enable government authorities, parents' groups, schools, Resident Welfare Associations, corporate organisations and any other concerned parties to develop and maintain inclusive play spaces.

Core Principles

The fundamental principles guiding the development and maintenance of public play spaces include:

Reach: Each ward in a city, must have dedicated play spaces that meet the needs of all children of all ages. This will ensure that a public play space is available to every child at an easy distance from their home. Public transportation facilities to and from the park must be adequate and disabled-friendly.

Dedicated spaces for play: City planning and development must separate parks, which have multiple users/usages, from play spaces to ensure that children enjoy adequate space for their play and recreation. Designated spaces may be provided within existing parks, but these should be adequate to cover the needs of all children residing in the neighbourhood. They must comprise of at least 30% of the space earmarked for the park. Play spaces that are not part of an existing park need to be also considered.

Inclusion and accessibility: All play spaces must be inclusive and accessible. They need to have universally accessible features in the space as well as in play equipment. Accessible features must pertain to all disabilities. Additionally, every child in the city, whether rich or poor, with or without any disability, whether girl or boy, should be able to use the play space.

Age-appropriateness: The dedicated play space in every ward must respond to the evolving play needs of children as they grow. Separate spaces for infants and toddlers (0-4 years), young children (4-7 years), older children (7-12 years) and adolescents (12-18 years) need to be created.

Free: Public parks, by definition, must be free and devoid of monetary charges to allow access to all sections of society.

Protection and safety: A non-abusive environment should be guaranteed as a necessity. Park staff members need to be trained to respond to safety threats and medical emergencies.

Community participation: Local communities as the primary users of parks and play spaces must be actively involved in park development and maintenance. Participation must not only be voluntary but also institutionalised and vested with power.

Guidelines for Inclusive Play Space Development and Maintenance

Each park should contain play equipment that meets the varying developmental needs of children of different ages and abilities. The play space should be designed to encourage active exploration. Further, play equipment and activities should be modified to ensure optimum use by children with disabilities.

We propose the following guidelines for inclusive play space development and maintenance:

1. Overall play space/park environment

Play spaces for children from 0-18 years should have the following features:

Accessibility: All public play spaces must have universal accessibility features as listed in Annexure 4.

Facilities: All facilities as listed in Annexure 2 must be provided in all play spaces.

Orientation of staff and volunteers: All staff members working in the park need to be sensitised about the needs of children with disabilities as well as those of children from socio-economically marginalised communities.

Protection and safety: All park employees should be trained on safety and protection of children.

2. Play equipment and activities for children (0-9 years)

Children in this age group require activities involving:

Movement

Water

Adventure - Cave, Tunnel

Height and depth

These could include, but need not be limited to, the following (Refer to Annexure 3):

Movement activities like swings, slides and jungle gyms

Activities that promote balance, such as balancing rods and tandem walk

Climbing activities such as rope ladders

Activities that foster spatial development, such as the merry-go-round

Activities that provide tactile (touch) stimulation on hands and feet

Activities that are sound-based.

Further, the following provisions should be made for this age group:

Sufficient sand and grass in the play space for children below 6 years

Open spaces for group play such as catch and throw, hop scotch, tag, etc.

Sheltered spaces that can be used for activities such as art, craft, reading, etc.

3. Play equipment and activities for children and young adults (9-18 years)

This age group needs open space for playing group games and sport activities such as cricket, basketball, football, etc. Appropriate modifications to make the equipment disabled-friendly need to be made. For instance, for basketball, the hoops may be at two levels so that those who use wheelchairs can also play.

4. Maintenance

Primary responsibility for maintenance must rest with the Local Municipal Authority.

The Ward Committee envisioned in the Nagar Palike Act should be empowered to monitor, develop and maintain every play space in the ward. The Ward Committees must be able to allocate funding and assistance to individual play spaces as per requirements advanced by the local maintenance committees and should act as a communication link between the Municipal Corporation and the local maintenance committees.

A local community-based committee comprising of residents, parents, children and interested citizens to oversee maintenance of individual play spaces should be formed. They must also be endowed with recommendatory powers for small repairs/improvements that are periodically necessary. Where applicable, the committee shall follow relevant guidelines and regulatory circulars. The committee must have proper authority over park employees, whether government or contracted staff, to ensure that required maintenance is conducted. The ward committees and local maintenance committees must work together to manage play spaces. Local community-based organisations must be vested with the authority to conduct regular training and sensitisation workshops for park staff members.

Division of responsibilities

Task	Primary responsibility
Needs assessment and planning	Community bodies including groups of children and their caregivers, in collaboration with government officials, rehabilitation therapists and urban planners
Funding	Local Municipal Authority / government agency
Development of the play space	Local Municipal Authority / government agency
Maintenance assessment and supervision	Community bodies
Maintenance work	Local Municipal Authority / government agency
Training and sensitisation of park employees	Community bodies with co-operation from Local Municipal Authority



TECHNICAL MANUAL





SWINGS

Playing on the swing is usually a favourite with all children.

Spontaneous play on the swing supports balancing and body coordination among children. It involves hand, arm and finger coordination and grip strength as children need to move their arms and legs to 'push' the swing.

Having bells in the chains of the swings not only makes it more appealing to all children, it would help children with visual impairment identify the swing and enjoy the musical experience.

Swings are of different kinds, each having its unique set of benefits. It would be useful to have one of each type in every play space.

Flat seat swing (regular swing)

Quick Facts:

Age-group: 4-10 years

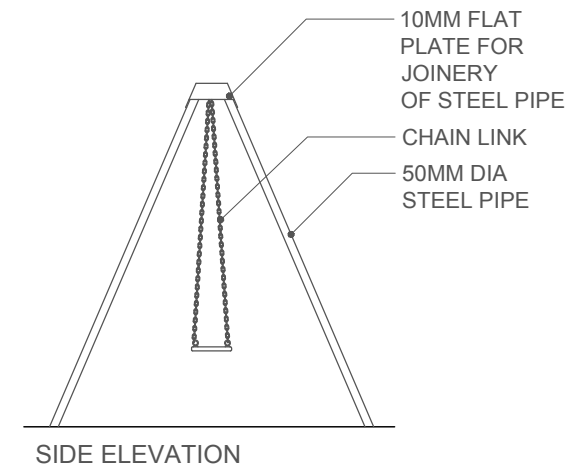
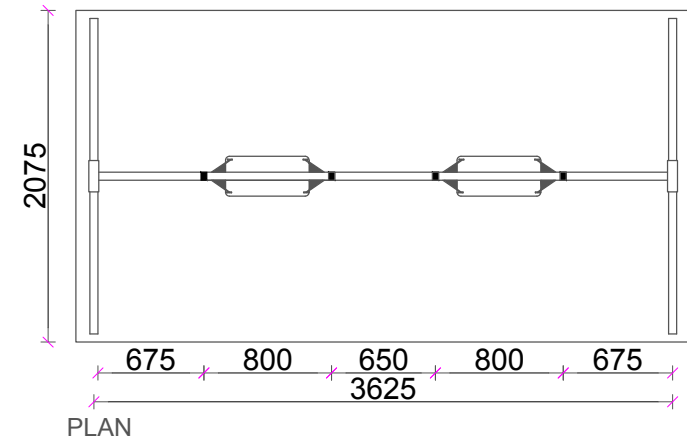
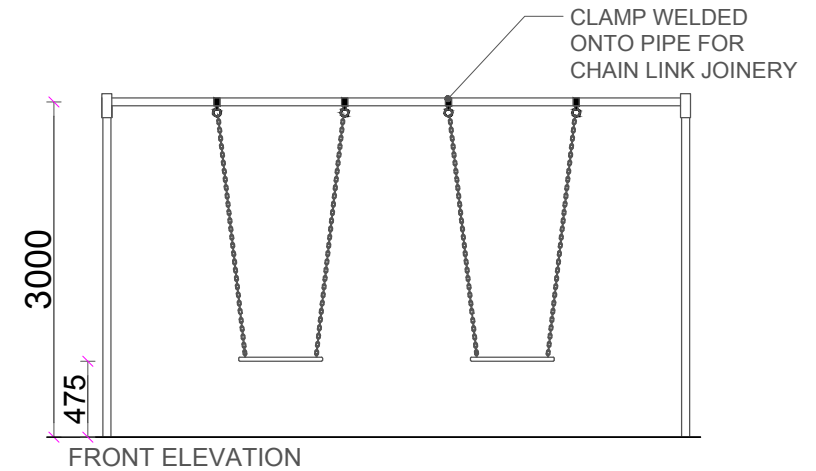
Manufacturer: Toys & Sports, Bengaluru

The flat seat swing facilitates sensori-motor coordination.

One experiences the feeling of body cutting through space, thus enhancing body awareness and producing a sense of thrill. The sense of balance is also refined through upper body movement.



M N Krishnarao Park, Bengaluru



Safe swing

Quick Facts:

Age-group: 4-10 years

Manufacturer: Vinyaas Play Systems, Bengaluru

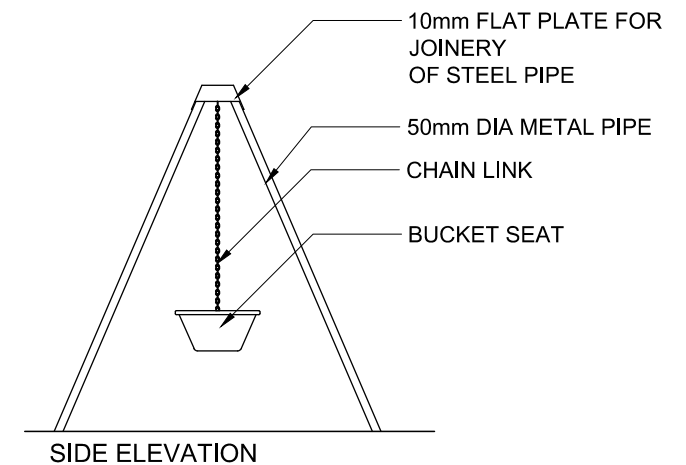
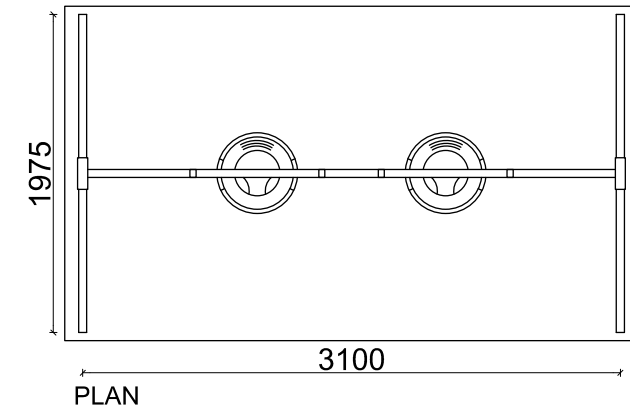
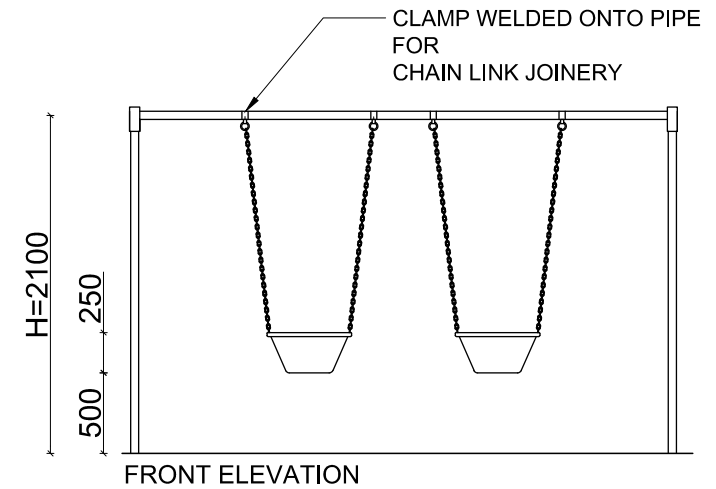
The safe swing is suitable for young children as it offers them greater security. It also ensures upper body support and better grip for children with developmental delays.



Gayatri Devi Park, Bengaluru



Coles Park, Bengaluru



Family Swing

Quick facts:

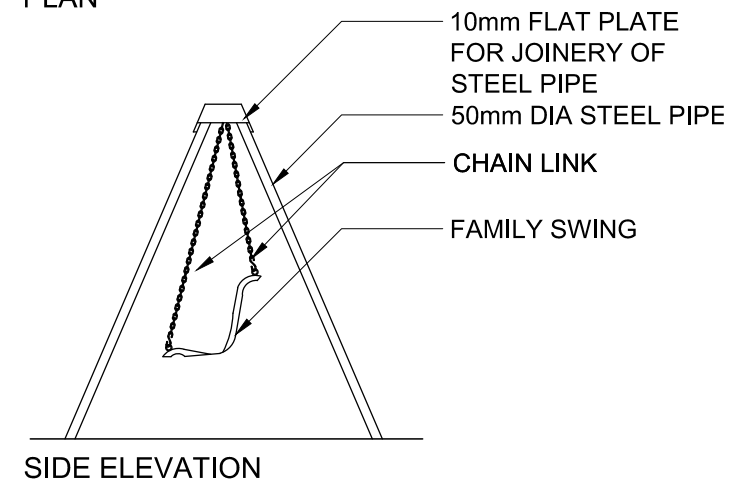
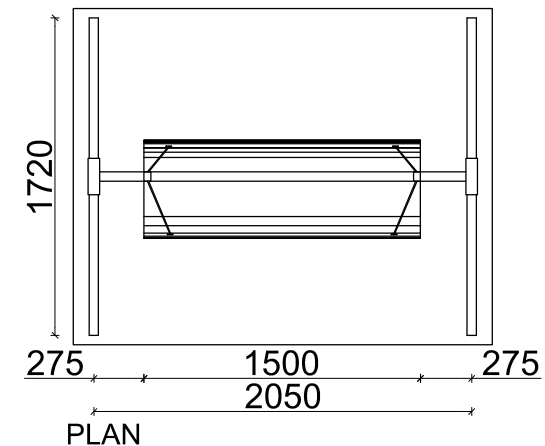
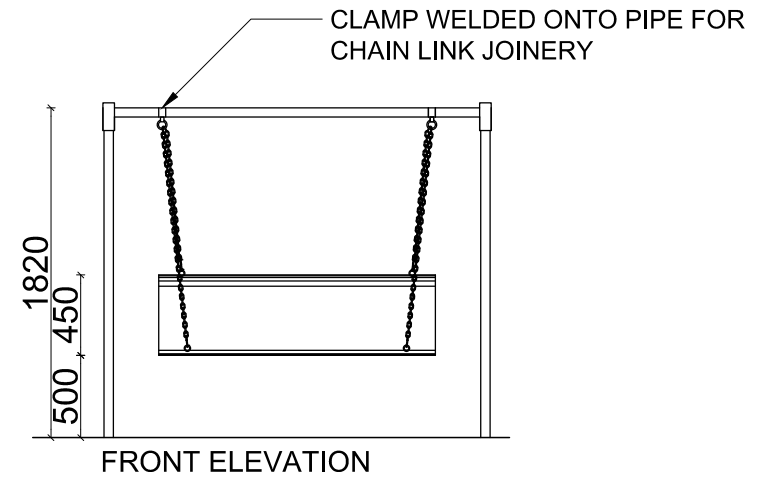
Age-group: Children and Adults

Manufacturer: Vinyaas Play Systems, Bengaluru

The bench design of the family swing helps children build their social skills as they make new friends and interact with one another while swinging together. For children requiring support, such as older children using wheelchairs, the family swing offers the possibility of parents/ caregivers/ other children sitting alongside and sharing the joy and benefits of swinging together.



Gayatri Devi Park, Bengaluru



Tyre Swing

Quick Facts:

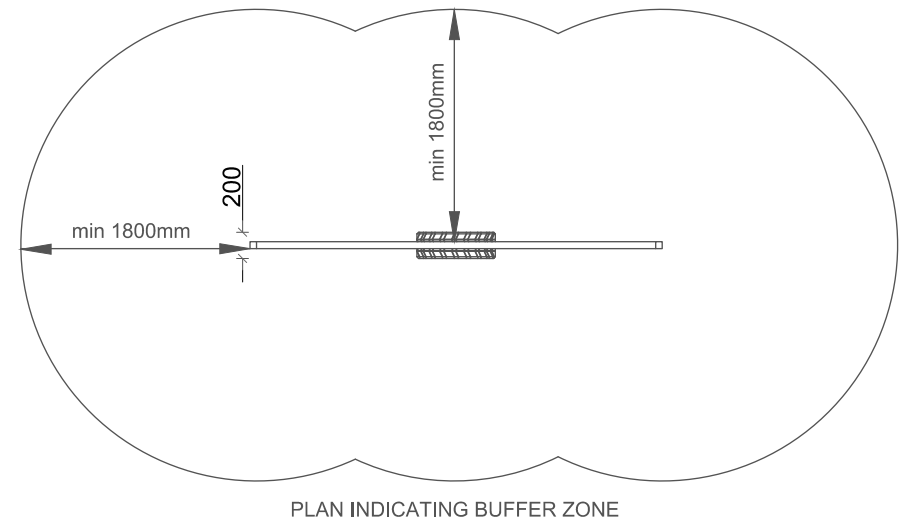
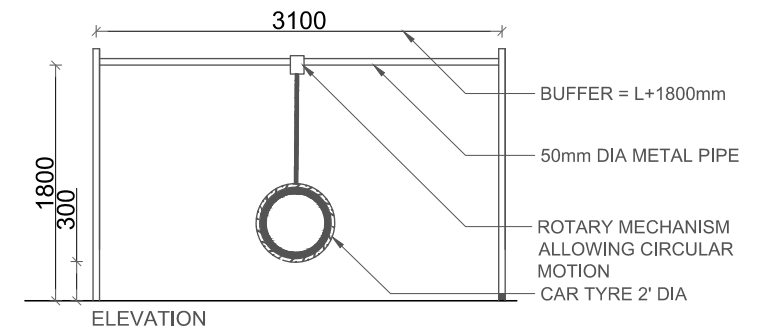
Age-Group: 3-12 Years

Manufacturer: Toys & Sports, Bengaluru

The tyre swing enhances body orientation, enabling a better sense of body in space.



M N Krishnarao Park, Bengaluru

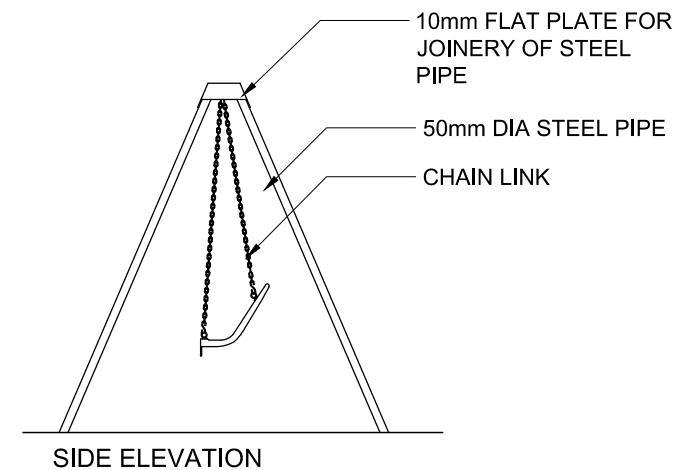
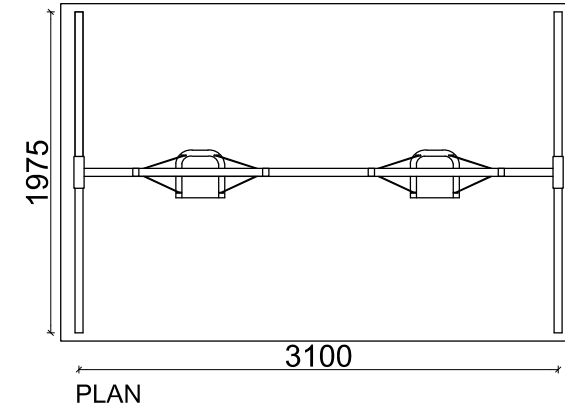
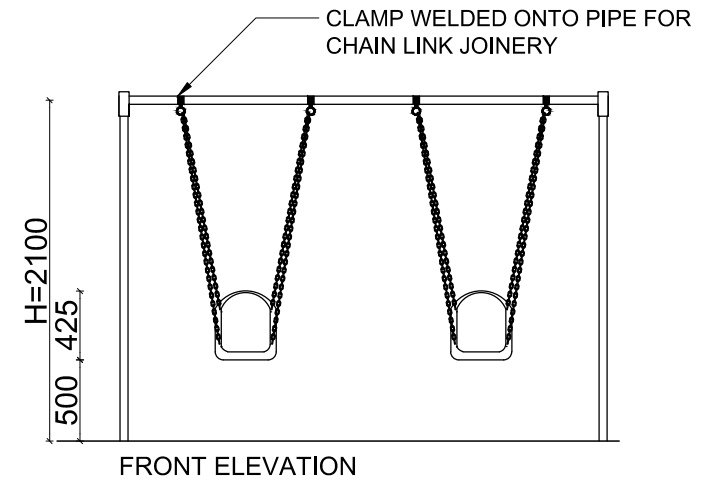


High-backed swing

Quick facts

Age-group: 4-14 years

This swing would be especially beneficial to children who need upper body support.





SLIDES

The slide helps sensori-motor development and spatial awareness in children as they use their limbs to climb and slide down.

It enhances sense of direction and body awareness, specifically gaining the ability to accommodate oneself according to the space available and understanding one's body with reference to the space surrounding it.

It builds children's confidence to balance their body in space and sharpens their reflex reactions.

Playing on the slide develops social skills in children as they learn to wait for their turn or assist other children in need of help.

Different kinds of slides catering to different needs of children may be installed in every play space.

It would be good to have three kinds of slides in all play spaces to offer children increasing challenge.

All slides must have:

Facilities for safe landing and gradual descent

Sand at the base that is regularly refilled

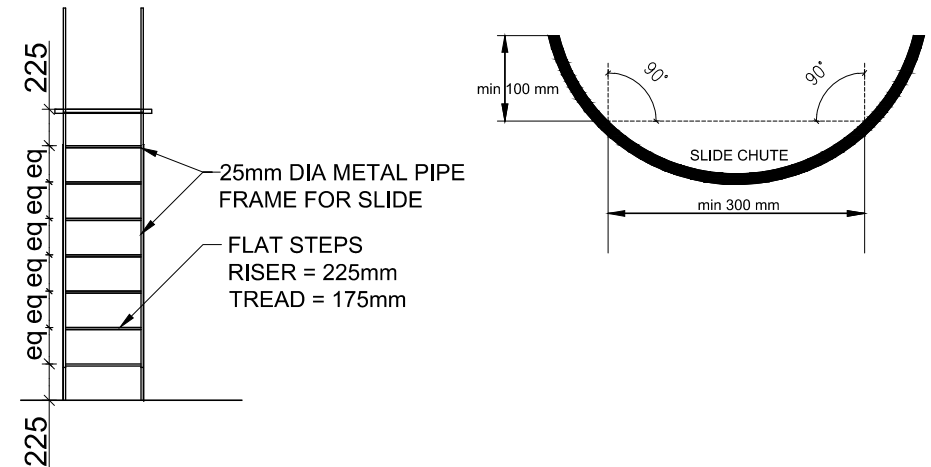
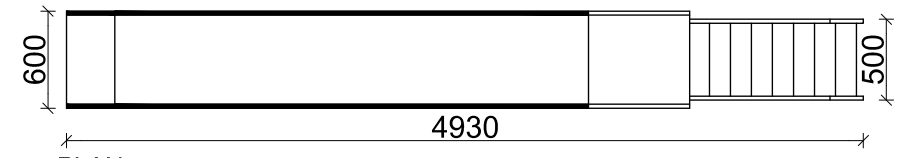
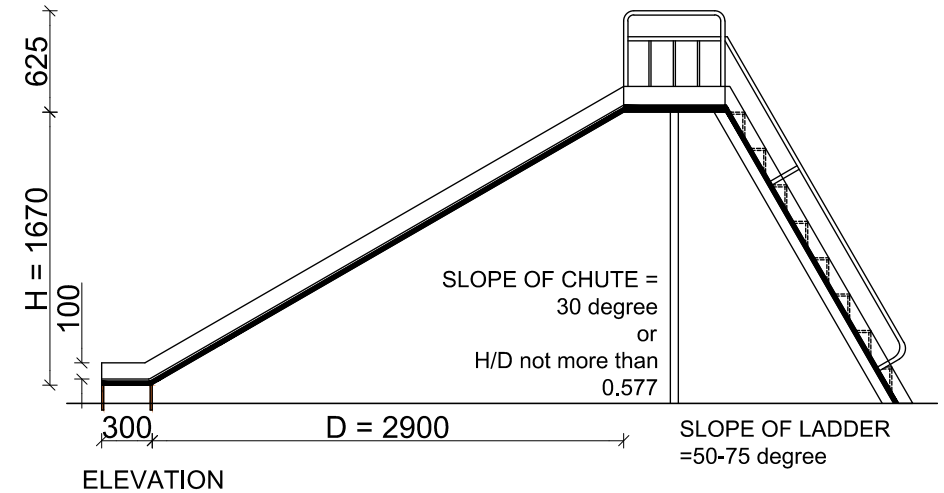
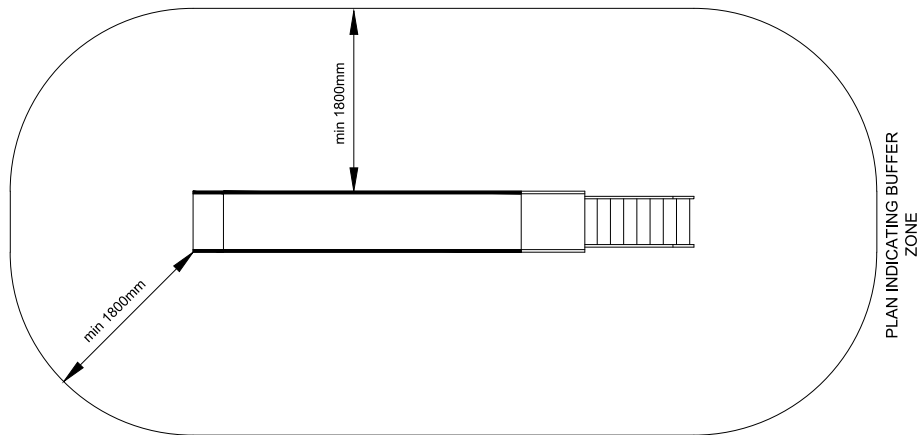
Fall-proof slide

Quick facts

Age-group: 3-7 years

One slide in the play space should have steps that are flat with no empty space between the steps. This will ensure that children who are visually impaired do not fall in the empty space.

The sliding surface may be curved to make children feel more secure. This is especially useful for children who climb the steps but may be scared of sliding down.



Steps with rods

Quick Facts:

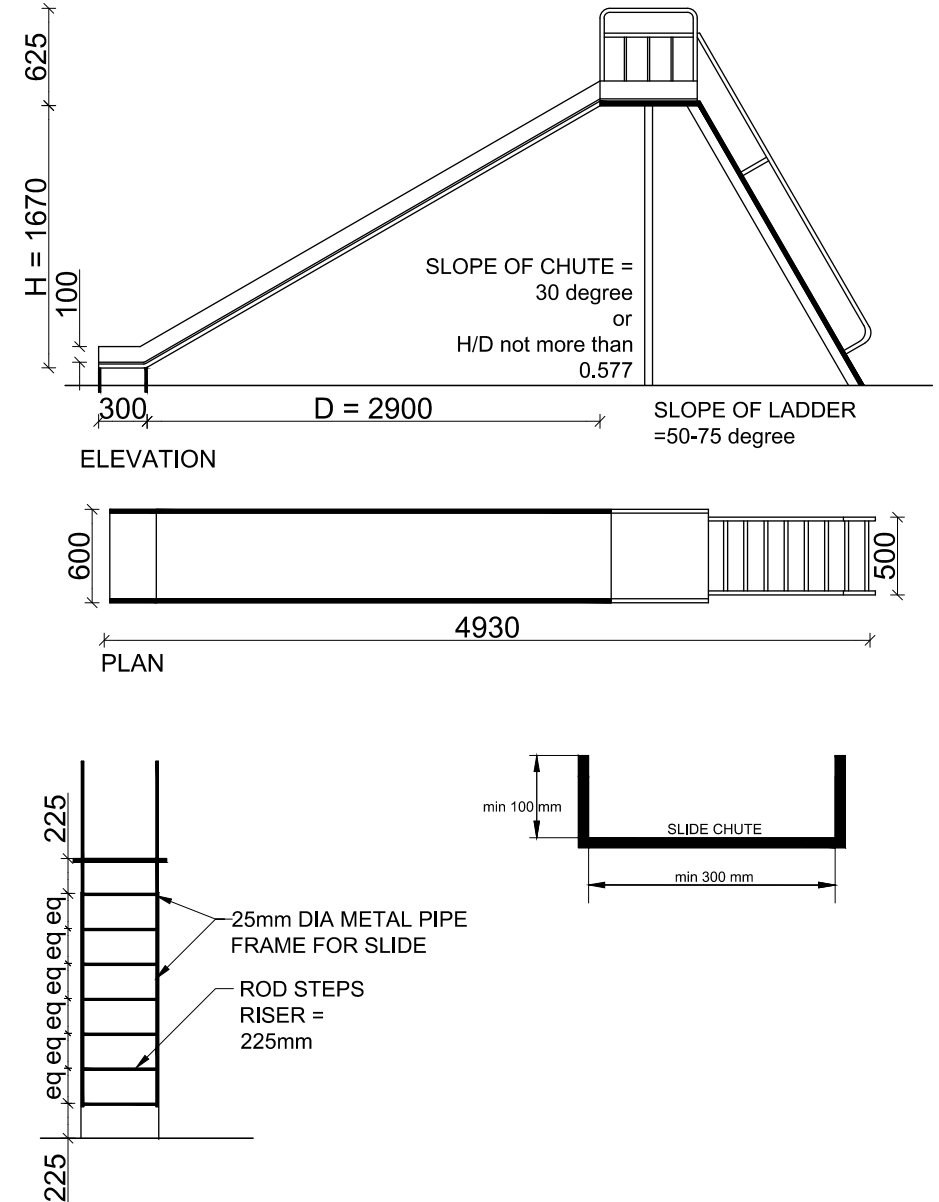
Age-group: 5-12 years

Manufacturer: Toys & Sports, Bengaluru

When children have mastered the previous slide, they need a greater challenge. This slide will enable them master climbing on rods instead of steps and sliding down a straight surface.



M N Krishnarao Park, Bengaluru



Wheelchair accessible slide

Quick facts

Age-group: 3-12 years

Manufacturer: Vinyaas Play Systems, Bengaluru

This will enable children who use wheelchairs to have a safe sliding experience. The structure has a ramp and a platform at the top for wheelchairs to move up. The sliding surface should be at 2 feet height and slope should be 1:10. It is advisable that the wheelchair is pushed by parent/ caregiver and not self propelled.



Gayatri Devi Park, Bengaluru



CLIMBERS

Climbing helps children build their gross motor and coordination skills. It also helps them in motor planning. Deciding what foot to place where, which hand to place where, so that they move up the frame forms the basis of problem solving. Climbers need to offer increasing challenges to meet the needs of children as they grow.

Rope Climber I

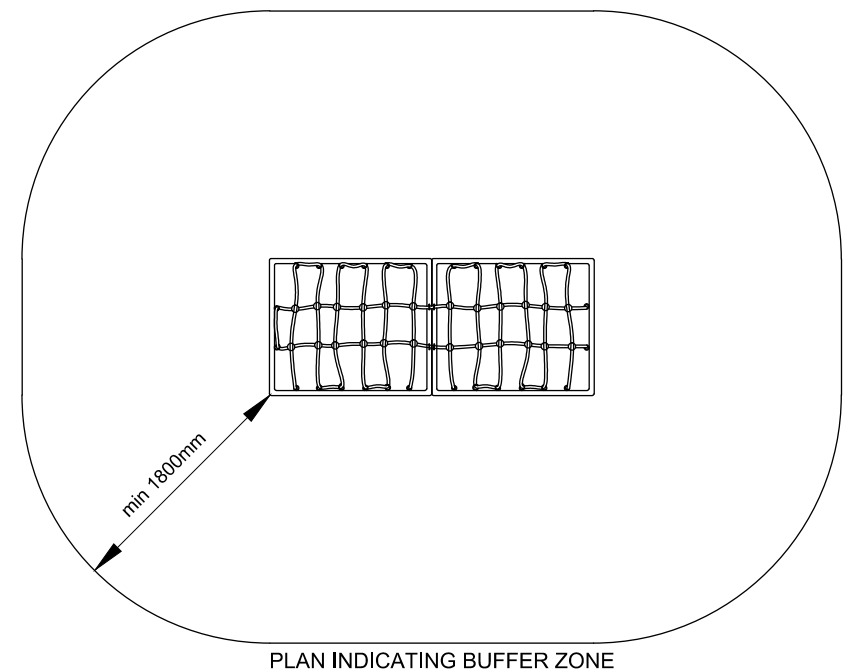
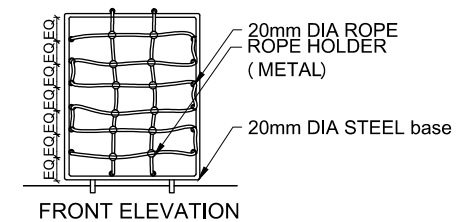
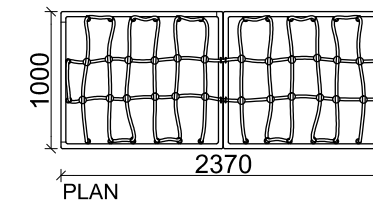
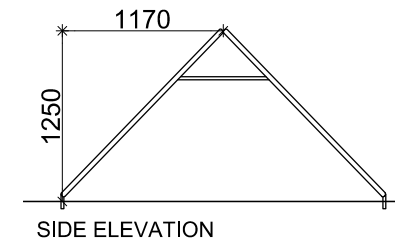
Quick facts

Age-group: 3-12 years

Manufacturer: Vinyaas Play Systems, Bengaluru



Gayatri Devi Park, Bengaluru



Rope Climber II

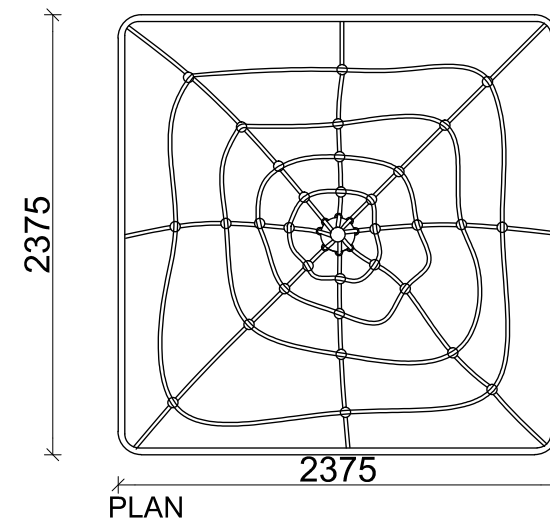
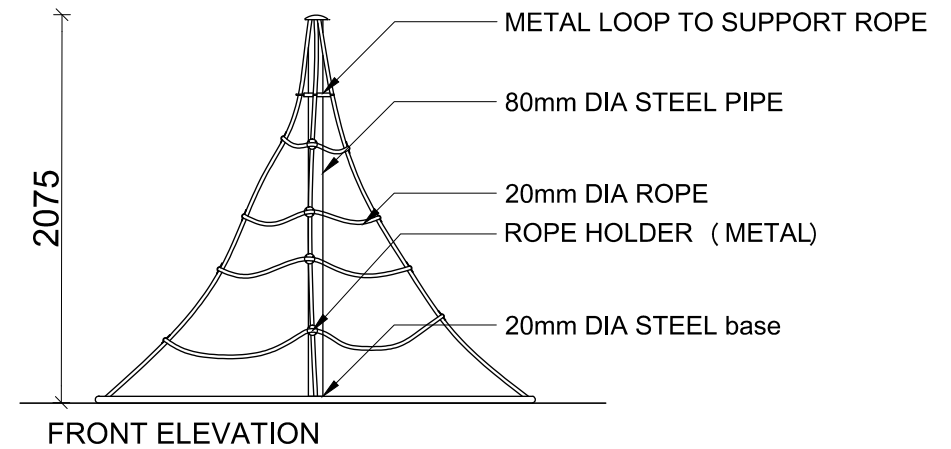
Quick Facts:

Age-group: 4-14 years

Manufacturer: Vinyaas Play Systems, Bengaluru



Gayatri Devi Park, Bengaluru





SEE-SAW

The See-saw helps children develop their fine and gross motor skills as they use their hands to grip the handles and legs to push themselves up. It helps them maintain balance.

It also enables two child coordination and is a fun way of interaction between children. Have we not seen one child push herself up suddenly, which in turn makes the other child come down, sometimes with a thud, that makes the first child joyous? Or the child at the bottom end, refusing to push up, leaving the child on the top stranded!

High-backed see-saw

Quick facts

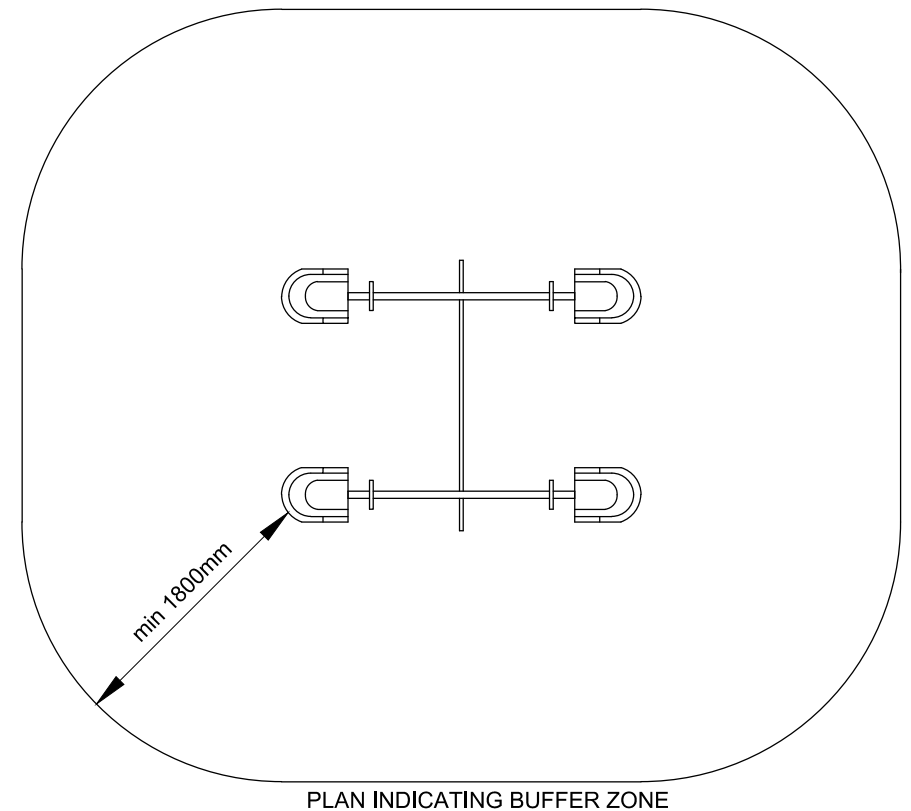
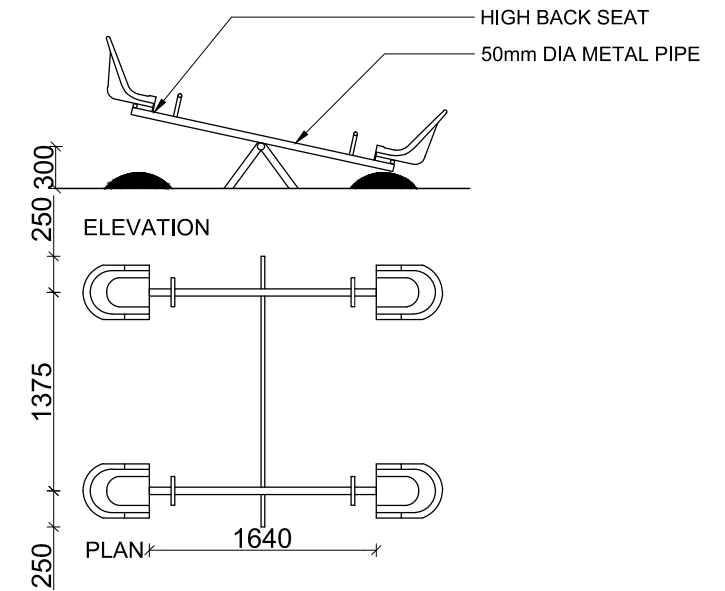
Age-group: 3-12 years

Manufacturer: Rachit Sales, Nagpur

This helps children who need upper body support. A belt to secure the child will make it safer.



Lendra Park, Nagpur



See-saw with flat seats

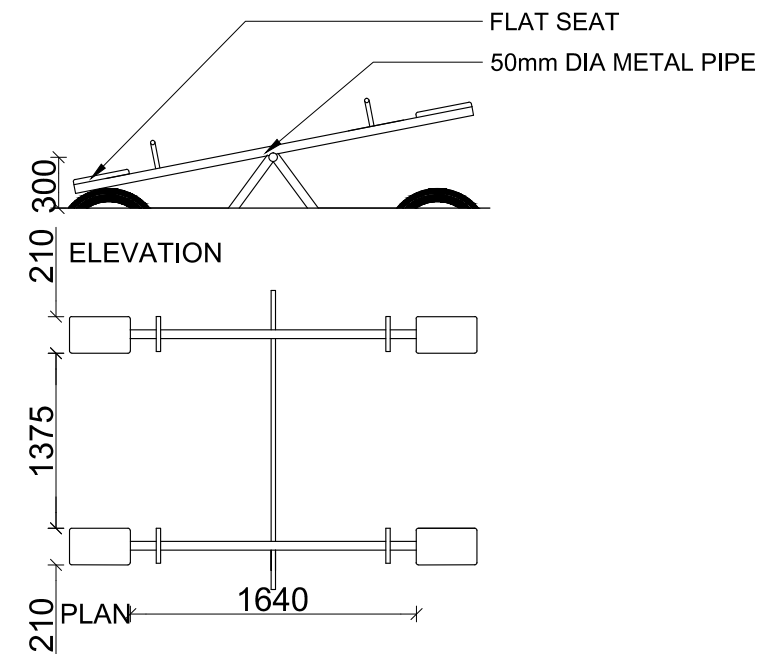
Quick Facts:

Age-group: 2-12 years

Manufacturer: Toys and Sports, Bengaluru



M N Krishnarao Park, Bengaluru



MERRY-GO-ROUND

The merry-go round helps children develop their fine and gross motor skills as they use their hands to grip the handles and legs to spin themselves. It also helps children balance their body as they have to take care not to fall.

There are different kinds of merry-go-rounds and it would be good to have one of each in every play space.



Gayatri Devi Park, Bengaluru >>

High backed Merry-go-round

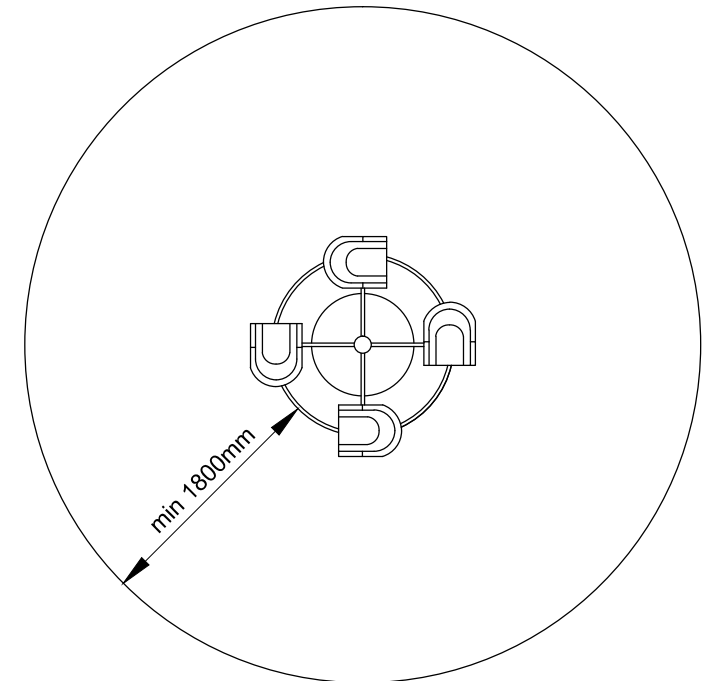
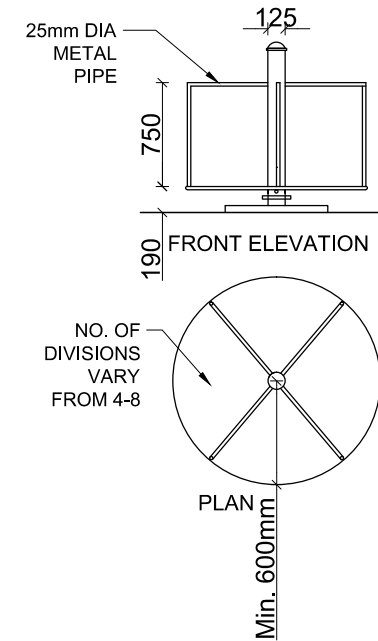
Age-group: 3-8 years

Manufacturer: Hope Foundation, Mumbai

This would help children needing upper body support derive the developmental benefits of going on the merry-go-round.



Rustom Baug, Mumbai



PLAN INDICATING BUFFER ZONE

Wheelchair accessible Merry-go-round

Quick Facts:

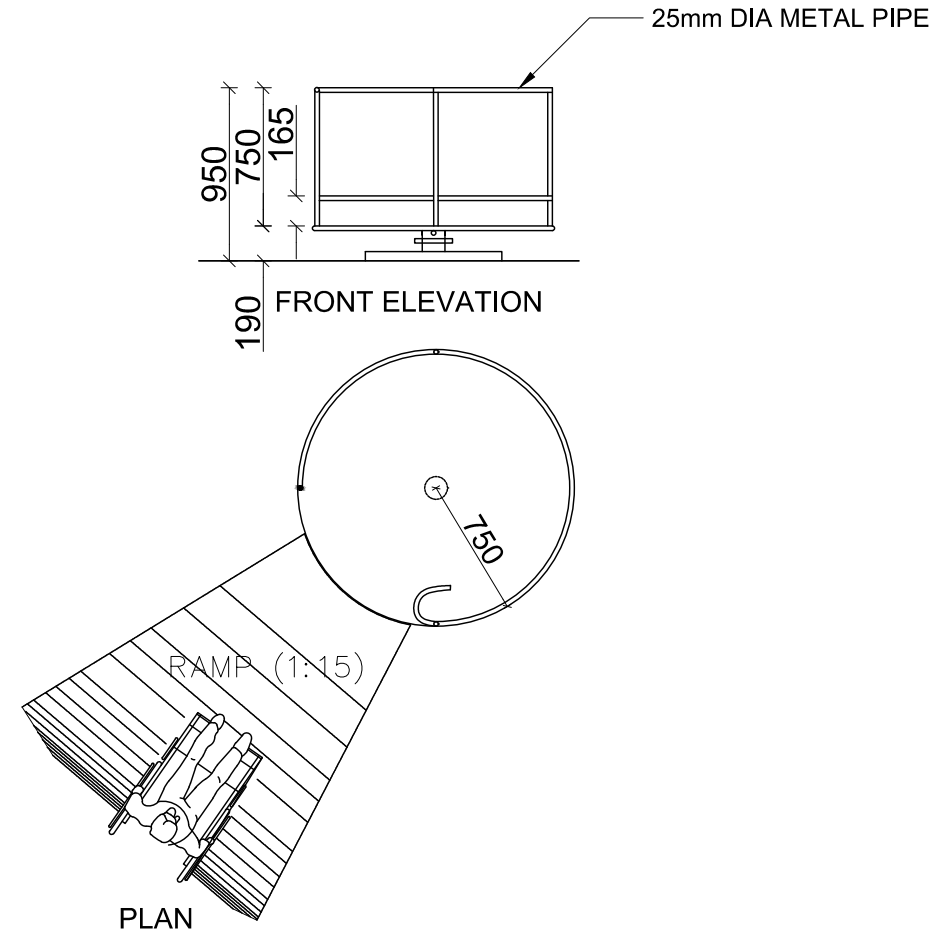
Age-group: 3-12 years

Manufacturer: Toys & Sports, Bengaluru

The wheelchair merry-go-round specially caters to children with orthopaedic difficulties, cerebral palsy or multiple disabilities. It supports them to independently balance their body and enhances their self-confidence. The merry-go-round has a platform and a ramp through which the wheelchair can enter. It is also a vehicle for inclusion of all children as there is space for other children to stand along with a child who uses a wheelchair.



M N Krishnarao Park, Bengaluru



SENSORY INTEGRATION

Sensory integration refers to the process by which the brain organises and interprets touch, movement, body-awareness, sight, sound and gravity in a holistic manner. This is critical for children to be able to perceive and respond to their environment appropriately.

Some children may face problems related to learning, development or behaviour if the information received and interpreted by their senses is incomplete. For example, some children may over react to touch since they perceive all touch and all textures in a far more heightened manner than most people. They need to be gradually exposed to different textures, over which they can walk, which they can touch, so that their responses become appropriate.

A variety of fun elements can be incorporated into the play space to enable this.

Sensory Wall

Quick Facts:

Age-group: 3-12 years

Manufacturer: Kilikili, Bengaluru

This is a wall of different shapes, with different textures to touch with the hand. It is also useful for children with visual impairment who can locate the different shapes through touch. The wall helps children climb up, come down, go under, go over etc.

It enables children to:

Discriminate between different sensations

Enhance body balance

Gain spatial awareness



Sree Ramana Maharishi Academy for the Blind, Bengaluru

Sensory Pathway

Quick Facts:

Age-group: 2-10 years

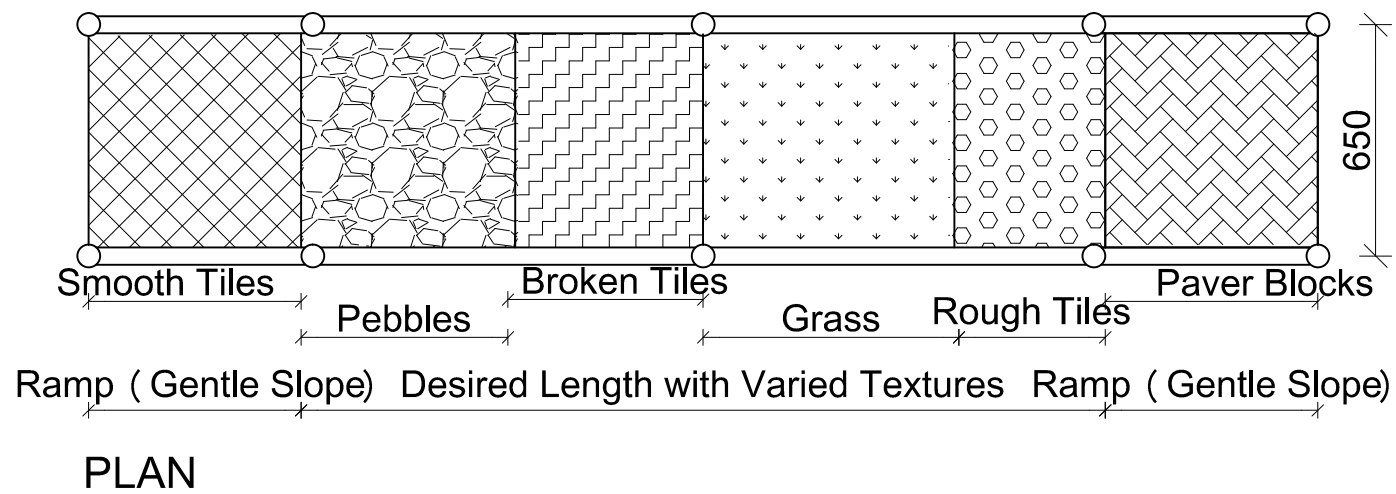
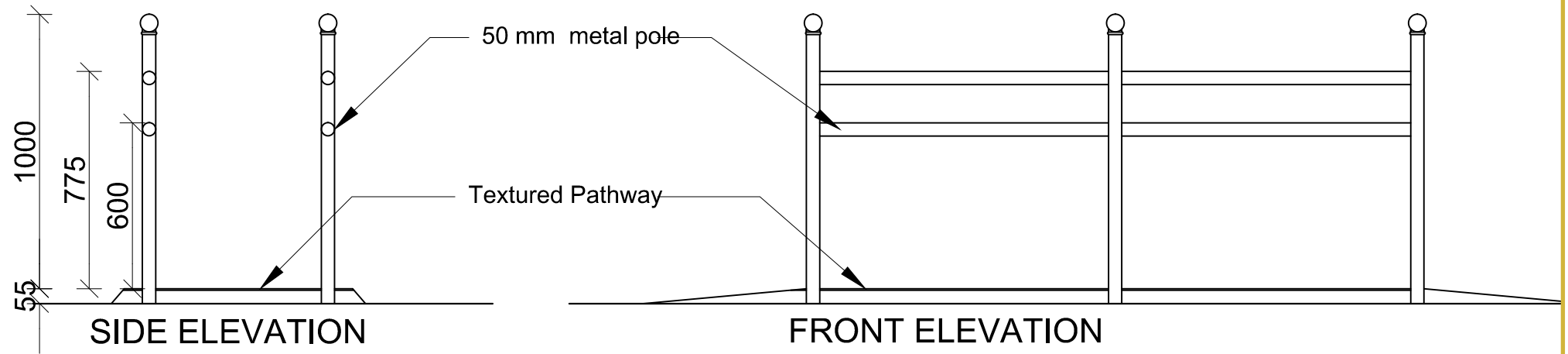
Manufacturer: Vinyaas Play Systems, Bengaluru

Some of the pathways in the play space can have different textures on the ground such as grass, smooth tiles, serrated tiles, pebbles etc. This could be in a separate area or integrated into the pathways of the play space itself. If it is integrated into the pathway of the play space, care should be taken to see that it does not impede the movement of a wheelchair.

The pathway is very useful as it addresses the child's need to seek different stimuli and enables responses to gradually normalise.



Gayatri Devi Park, Bengaluru



SAND PLAY

The simple activity of pouring, filling, smoothening and measuring sand is not just fun. This versatile play material has numerous benefits for all children. It strengthens fingers and enables pre-writing skills. During sandplay, children are introduced to concepts of volume, size, height, etc. It kindles scientific reasoning and cognitive problem-solving (How do I keep my sandtower from falling? What happens when water is poured on sand?)

It also offers the child sensory stimulation, related to touch (tactile) and movement of limbs (kinesthetic) which in turn forms the basis for coordinated movement.

It would be good to have soft sand around the play area except in areas that need to allow access to wheelchairs.

Many children also find sandplay creative and calming. So the next time your child heads to the sandpit, instead of chiding her, just accompany her!



Inclusive sand-pit

Quick Facts:

Age-group: 1-8 years

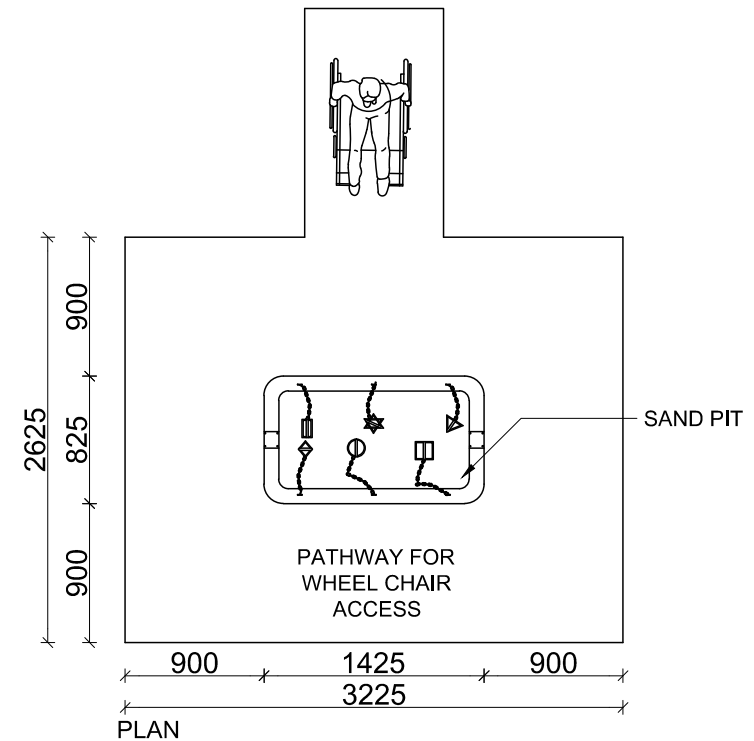
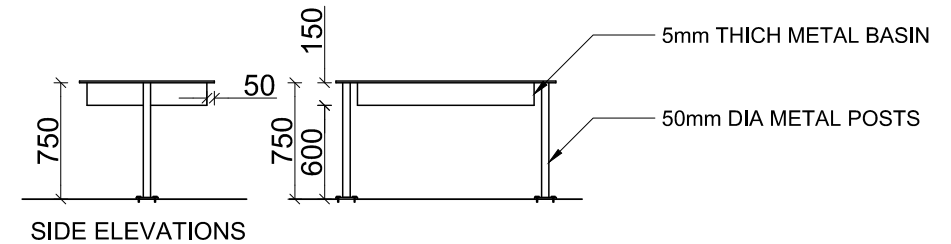
Manufacturer: Kilikili, Bengaluru

Having a sand pit that has a table at one end will ensure that children who use wheelchairs can play with all their other friends in the same sand space!

All you have to do is put a sand pit at table height to allow access for children who use wheelchairs.



Gayatri Devi Park, Bengaluru



Tyre-tunnel

Quick Facts:

Age-group: 2- 7 years

This tunnel is made of truck or car tyres that are embedded in sand. For children with developmental delays, the tyre tunnel helps left-right brain coordination and sensorial development.

The tyre tunnel also

- enhances management of space with respect to one's body

- refines judgement of space and shape

- encourages planning of body movement

- provides tactile inputs in the experience of different textures like sand, rubber

- provides sensory inputs in the experience of different body movements like squeezing, bending, crawling, thus enhancing the ability to accomodate one's body in different environments

- enhances sense of distance and height



Gandhinagar Park, Mangaluru

Gayatri Devi Park, Bengaluru >>



FUN WITH SOUND

Quick Facts:

Age-group: 1-8 years

Manufacturer: Swaram Musicals, Auroville, Pondicherry
Kilikili, Bengaluru

Equipments incorporating sound induces a sense of calm and helps regulate emotions. They are especially useful as fun elements for children with visual impairment.

Images (Clockwise): Sound strip, Tubular Bells, Drums with Gas Cylinders, Tubular Bells, Bells alongside the slide



Sree Ramana Maharishi Academy for the Blind, Bengaluru

TOUCH

Quick Facts:

Age-group: 4+ years

Design: Kilikili, Bengaluru

This section features equipments that are tactile in nature. They are based on the use of touch to engage children. These are useful for all children and especially for children with visual impairment and for those with developmental disabilities.

A Fun Mural using English, Kannada, Braille and Maths symbols: Children can create various games and learn as they play. A very enjoyable teaching-learning tool too.



Mathru School for the Blind, Bengaluru

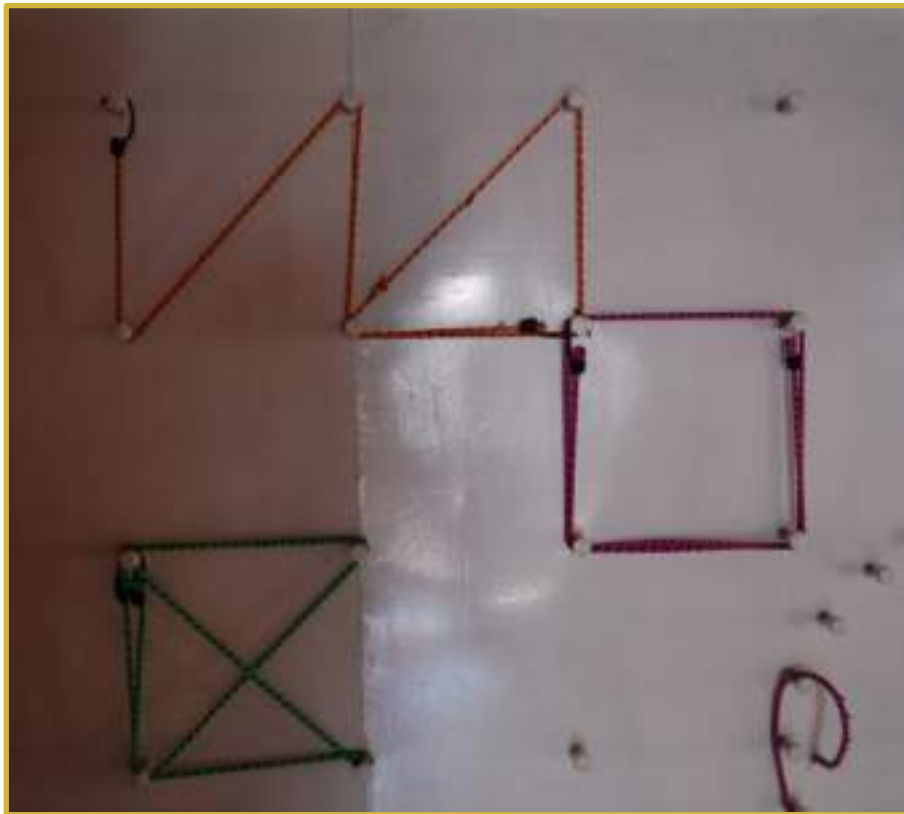
Exercise Wall

Quick Facts:

Age-group: 4+ years

Design: Kilikili, Bengaluru

This equipment is made of bolts around which stretchable ropes can be used to create shapes. Children with visual impairment can feel the shapes they create. It is also useful for teaching abstract concepts such as fractions.



Mathru School for the Blind, Bengaluru

Tangram Puzzles

Quick Facts:

Age-group: 4+ years

Design: Kilikili, Bengaluru

This game consists of magnetic wooden shapes that can be put together to form different shapes, as done with Tangram puzzles. A Knots and Crosses game alongside can be played using magnetic X and O. Children with visual impairment can feel the shapes they create.



Mathru School for the Blind, Bengaluru

Then some more...

DIFFICULT
WHEELCHAIR
COME

STEEP RAMP
FOR
CHAIR TO
DOWN



STONES
BLOCK THE WHEELCHAIR

at the top of the ramp
the stones are
in the way
of the wheelchair
and the person
is stuck
there

Wheelchair accessible play station

Quick Facts:

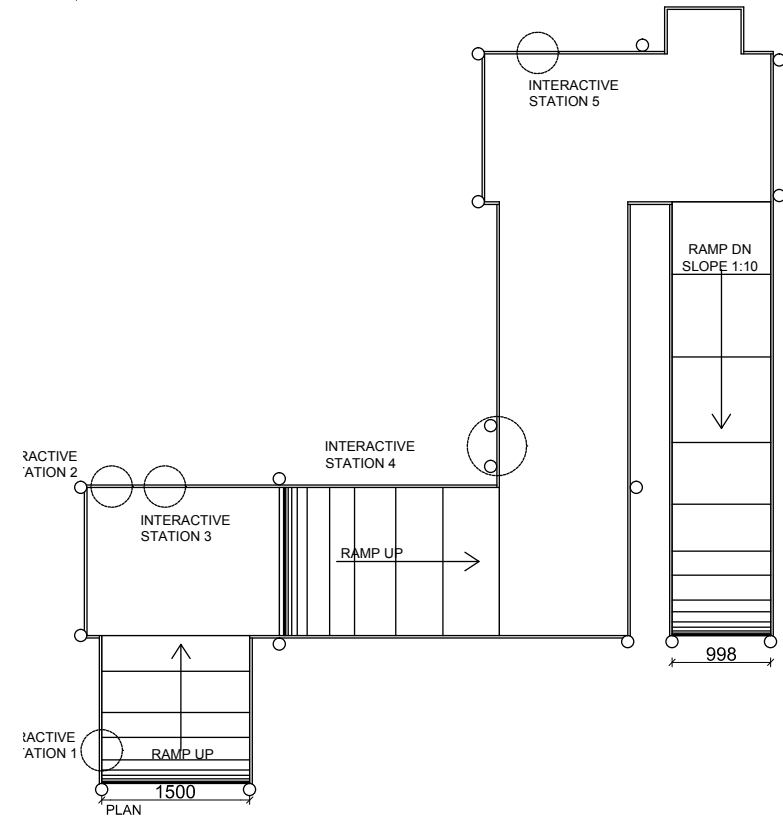
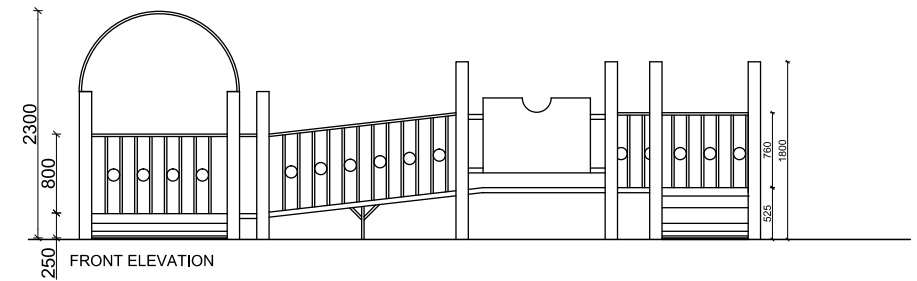
Age-group: 2-12 years

Manufacturer: Toys & Sports, Bengaluru

Different elements and play equipments may be combined in a playstation. This play station is wheelchair accessible and has a slide and a merry-go-round. The surface around the walls of the structure also has different play elements incorporating sound, textures and other fun elements.

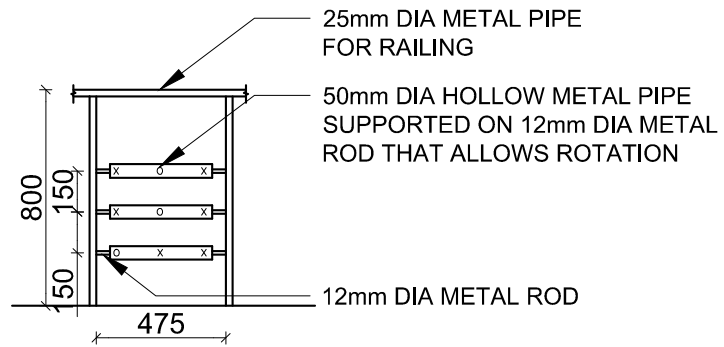


M N Krishnarao Park, Bengaluru

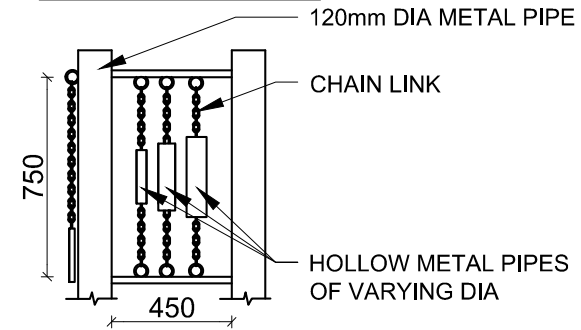




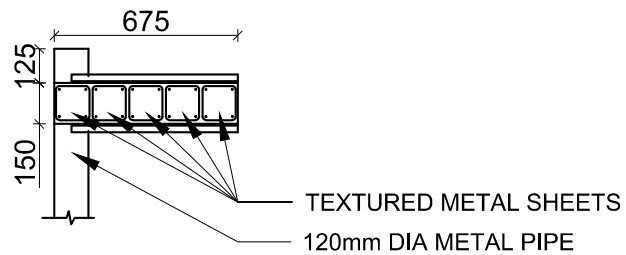
INTERACTIVE STATION 1



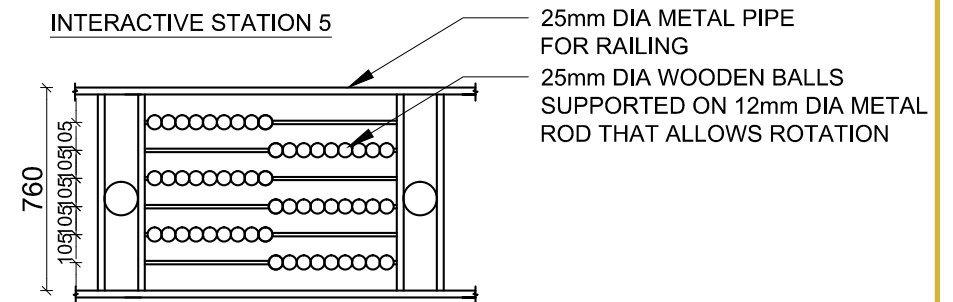
INTERACTIVE STATION 4



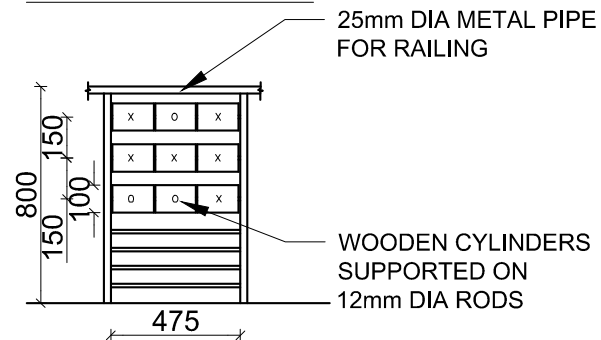
INTERACTIVE STATION 2



INTERACTIVE STATION 5



INTERACTIVE STATION 3



Balancing Beam

Quick Facts:

Age-group: 4-12 years

Manufacturer: Hope Foundation, Mumbai

Made of thick nylon rope, the Balancing Beam helps children learn to balance and move forward.



Rustom Baug, Mumbai

Rock Climbing Wall

Quick Facts:

Age-group: 2-14 years

Manufacturer: Hope Foundation, Mumbai

The rock climbing wall helps children learn to climb coordinating their hands and legs. It also helps them overcome fear of heights, if any.



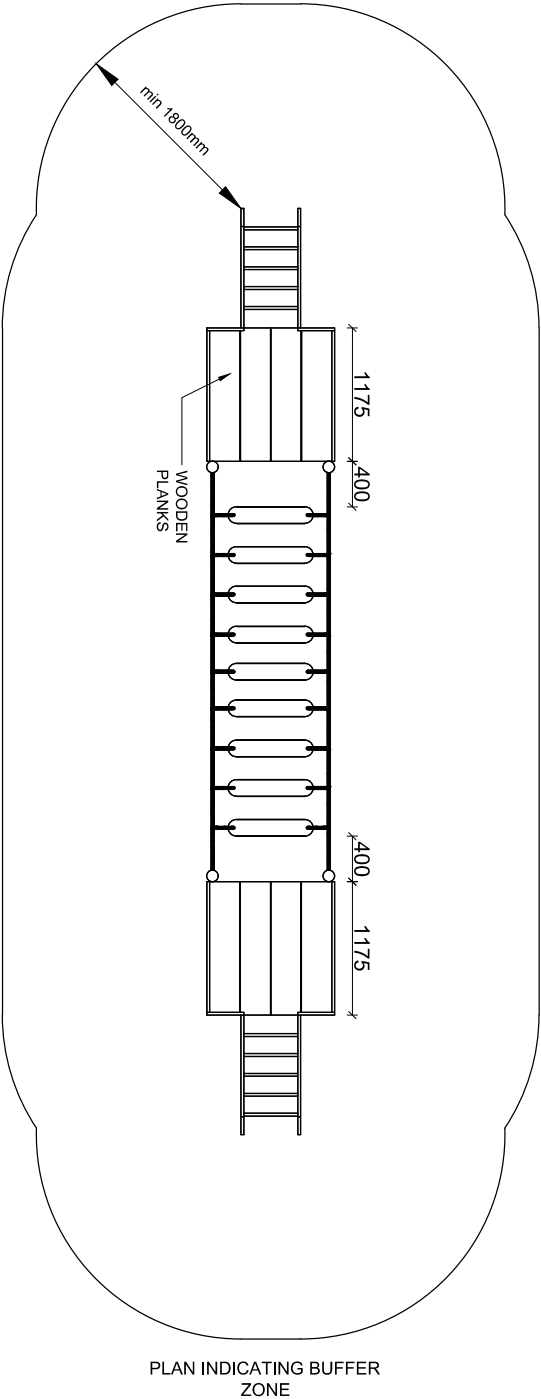
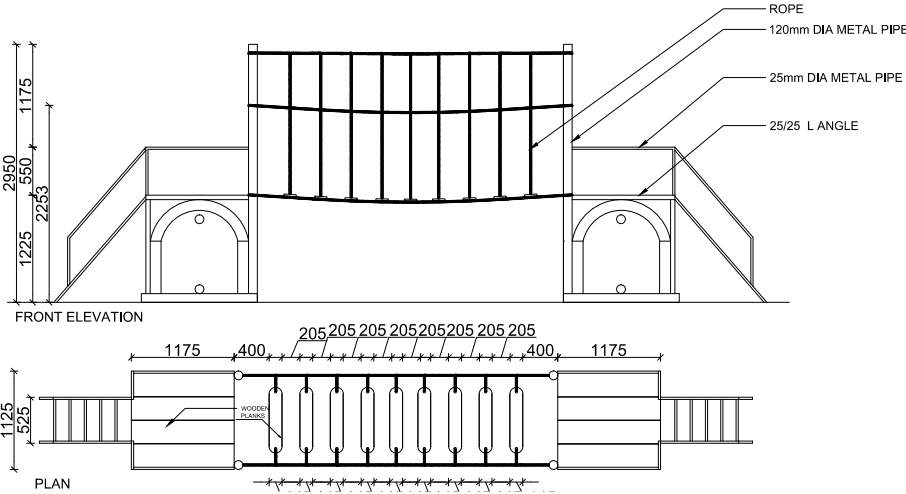
Rustom Baug, Mumbai

Burma Bridge

Quick Facts:
Age-group: 4-14 years
Manufacturer: Adreno, Bengaluru

The Burma Bridge, often seen in spaces offering adventure activities, facilitates:

- Spatial cognition
- Body awareness
- Space-time management
- Awareness of mechanics of pressure
- Gross and fine motor skills





Stepping Stones

Quick Facts:

Age-group: 3-8 years

Design: Kilikili, Bengaluru

Stepping stones, made of a series of tiles embedded in grass at varying heights and with varying textures, helps children learn spatial coordination. They have to judge the distance and height they have to traverse as they move from one stone to the other. The tiles have different textures to give a varied tactile experience.



Bubbles Centre for Autism, Bengaluru

Stationery Cycle

Quick Facts:

Age-group: 6-14 years

Manufacturer: Toys & Sports, Bengaluru

This is useful for children using wheelchairs. It helps build arm and upper body strength. It also enables alternate movement.



M N Krishnarao Park, Bengaluru

Wheel-Through Arcade

Quick Facts:

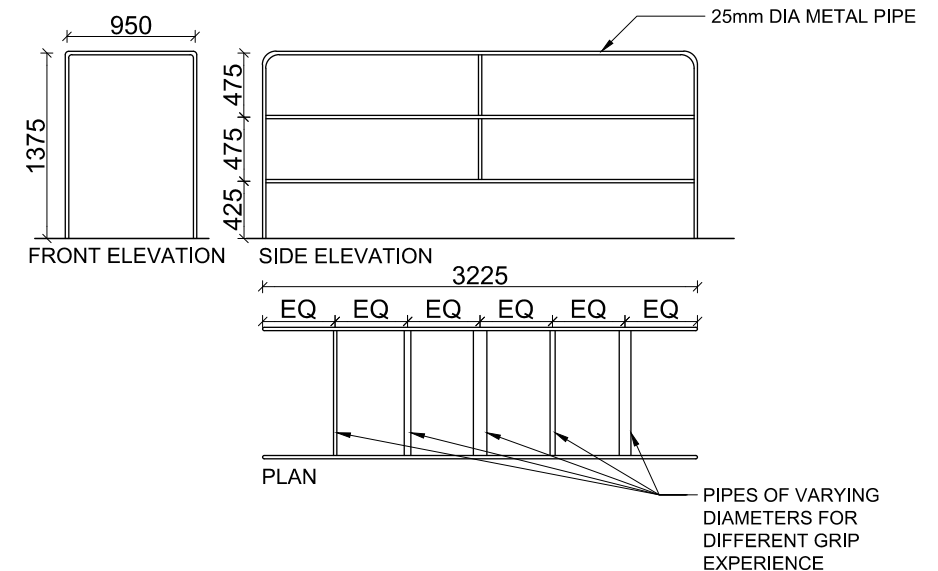
Age-group: 6-14 years

Manufacturer: Toys & Sports, Bengaluru

This is a structure which has pipes of differing textures and width which are mounted on a frame that is used by children for hanging. Children can use the different bars to move forward from one bar to another. Here each bar/ pipe is of a different texture and thickness so that the children learn different grips for different surfaces. The child using a wheelchair can use the same equipment to move along the path with alternating hand movements.



M N Krishnarao Park, Bengaluru



Basket Ball

Quick Facts:

Age-group: 4-14 years

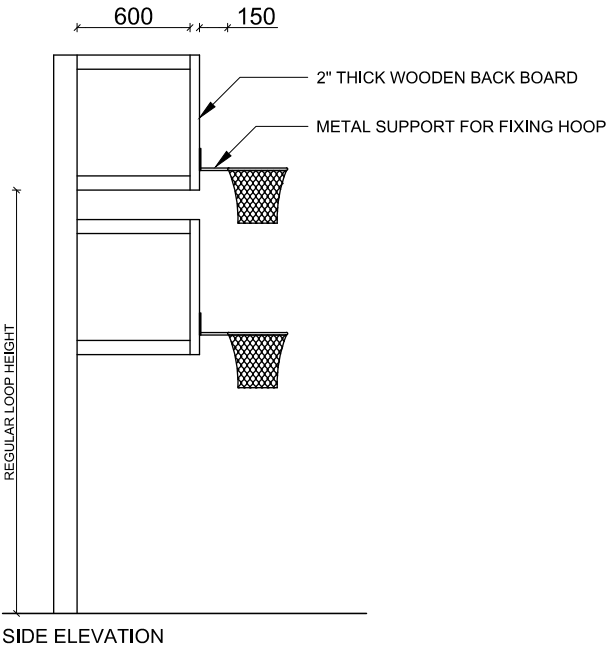
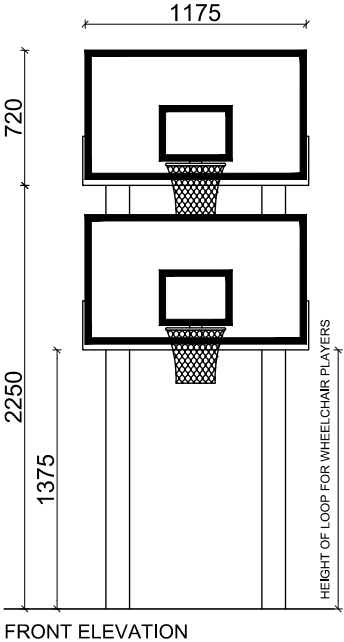
Manufacturer: Vinyaas Play Systems, Bengaluru

Basketball is useful for children to develop eye-hand coordination and helps them build concentration. The hoops are at two levels – a lower one for younger children and children using wheelchairs, the higher one for others.

As children learn to take turns, their language development and social skills is enhanced.



Coles Park, Bengaluru



I Play needs at different ages

1. Sensory-motor (0-2 years): This is the stage of solitary play. The child prefers playing alone, exploring the environment and him/herself. The child needs a safe, stimulating and enabling environment to crawl, walk, run, touch, and explore.

2. Symbolic and simple constructive (2-4 years): Play can be solitary or in groups. The child should exercise developing muscles while experiencing movement and sensation. Facilities such as merry-go-rounds, see-saws, swings, and slides foster development of the sense of balance and body spatial orientation. The child also begins to engage in role playing and pretend play.

3. Dramatic complex constructive & pre-game (4-7 years): Social play with other children begins. The child needs space for simple games in small groups such as catching games, hop-skotch, cycling, skating, etc.

4. Game (7-12 years): The child engages in cooperative play, loves risk-taking, and games with rules. At this stage, children require large open spaces for organised games such as cricket.

5. Recreational (12-16 years): The child becomes a young adult and prefers competitive games and sports and needs requisite facilities such as indoor and outdoor playgrounds.

II Play Space Facilities

All parks and play spaces, should have the following facilities situated as close as possible to the play area:

1. Toilets which are hygienic, accessible and well-maintained
2. Drinking water amenities with multiple height taps. For younger children and wheel chair users, it is recommended that the tap be placed between 800-850 mm from the ground
3. Dustbins where refuse is properly and regularly disposed
4. Well-lit play spaces
5. First-aid facilities under the charge of an adequately trained watchman/ caretaker
6. Disabled-friendly seating that is circular rather than linear
7. Shelters/sheltered spaces that can be used as activity corners, reading corners, etc. The shelter should be accessible with ramps and railings.

III Play equipment and activities

1. Swings: These can be of the following types, preferably one of each in all play spaces:

- a. Flat seat swings
- b. Bucket seat swings for children with minimal upper body support
- c. Family swings for older children using wheelchairs
- d. Tyre swings to enable complete body balance
- e. High-backed swings for children requiring upper body support
- f. Swings can have bells in the chains to provide an auditory marker and for fun

2. Slides: It would be good to have 2-3 of the following:

- a. Slides with flat, bar-like steps without gaps between the steps (so that children who cannot see, do not fall). The sliding surface can be with curved sides to make children feel more secure
- b. Steps of two slides with rods, as existing in most play spaces
- c. Slides of different heights that offer increasing challenge for children
- d. Slides accessible for wheelchairs having a ramp and platform at the top.
- e. Sliding surface to be at two-feet height with a slope of 1:10
- f. All slides should ensure facilities for safe landing, such as additional sand at the base sandpit, gradual descent, etc.

3. Climbers/Jungle Gym: All play spaces must have two jungle gyms/ climbers and two rope climbers:

- a. One jungle gym with flat bar-like steps at a lower height
- b. One jungle gym with rods, as currently existing in most play spaces
- c. Two rope climbers at different heights
- d. One rope ladder

4. Merry-go-round: Each play space must have a minimum of three with the following features:

- a. High-backed seats
- b. Wheelchair accessible, i.e., circular in shape with a platform and a ramp
- c. A standard one, as currently existing in most play spaces

5. See-saw: Each play space must have a minimum of two with the following features:

- a. High-backed seats
- b. Regular seats
- c. Bells fitted to the connecting rod

6. Tyre tunnel: This involves making a tunnel with four truck tyres embedded in a sand bed, to enable children to crawl

7. Sensory pathway: This pathway should be constructed using different textures such as grass, sand, differently textured tiles etc. embedded in the ground to facilitate tactile sensory stimulation

8. Sensory Wall: This wall should be constructed using different textures to facilitate tactile sensory stimulation

9. Sand

- a. Soft sand around the play area, except in areas that need to allow access to wheelchairs
- b. Sand table - sand pit positioned at a table height to allow access to children who use wheelchairs

10. Equipment that create sound

- a. Wind chimes
- b. Bells
- c. Xylophone
- d. Drums

11. Parallel bars of differing heights with a flat surface underneath

12. Sloping mounds of grass for children to roll or slide on

13. Spring ducks

14. Trampoline

15. Balancing beams of different widths

16. A special path for children, consisting of tunnels, slides, ladders, etc. which can be fun play

17. A bridge for children to walk over

18. Stepping stones – with different textures

19. Horizontal ladder at half foot height

20. Rock climbing wall

21. Walking barrel

22. Activities involving pushing and pulling
23. Water activities – fountains
24. Activity centre/performance space with activity huts such as those present in Bal Bhavan and Cubbon Park in Bengaluru
25. Maze with multiple activities
26. Stationary cycles, such as those in MNK Rao Park, Bengaluru
27. Wheel-through arcade with rods of different textures and width, such as those in MNK Rao Park, Bengaluru
28. Variety of trees – fruit bearing, and also with bird feeders

IV Accessibility Features

1. Wheelchair-accessible entrance gates.
2. Entrance gates should not open directly to the road. The provision for a proper barricade along the road is required
3. Levelled wide road from the entrance to the play space and park should be ensured
4. Pathways:
 - a. Non slippery and levelled pathways bordered by a handrail
 - b. Proper pathways that lead to the play area and equipment
 - c. Pavement design should incorporate guide blocks (Please see Page 115-116 for specifications)
5. Ramps with railings at entrance gates and play areas (Please see above and pages 108-109 for specifications)
6. Signage (Please see Page 112- 114 for specifications)
 - a. All sign boards and direction boards inside the park and play space should be in Braille (English and local language)
 - b. Signboards should follow the guidelines below:
 - i. Clear messages in simple fonts
 - ii. Use both upper and lower cases
 - iii. Avoid use of full stop
 - iv. Minimum character size should be 150mm
 - v. Use standard legible fonts such as Arial, Avant Garde, Times New Roman
 - vi. Avoid italics or script texts and decorative and fancy typefaces
 - vii. Since in a park, there is a lot of green in the background, recommended colour for the typeface is a white background for sign surface and black, blue or green typeface
 - c. A board at the entrance displaying American Sign Language alphabets so that anybody can communicate with the hearing impaired
 - d. Names of the play equipment should be displayed on a board near or upon the equipment to enable the hearing impaired to learn the names of equipment
 - e. Embossed and tactile signage at significant points
 - f. Layout maps - tactile, pictorial, and with words – should be provided
 - g. Remove signs that are discriminatory to wheelchair and pram users

7. Availability of wheelchairs or prams at the entrance, under the charge of the watchman/caretaker

8. Access Path / Walk Way

- a. Access path from plot entry and parking to building entrance shall be minimum of 1800 mm wide.
- b. Slope, if any, shall not have gradient greater than 1:12. Kerbs wherever provided, should have kerb ramps with 1:12 gradient. Kerb should be dropped, to be flush with walkway, at a gradient no greater than 1:12 on both sides if necessary and convenient crossing points. Width should not be less than 1200mm. Warning strip to be provided on the kerb side edge of the slope, so that a person with vision impairment does not accidentally walk onto the road (Fig 2).
- c. Selection of floor tactile paving - Guiding & Warning blocks shall be provided to guide persons with vision impairment. Finishes shall have non slip surface with a texture traversable by a wheelchair.
- d. Any obstruction along the pathways such as street furniture, lamp posts, bollards, traffic signs, directions signs, trees, shop awnings, wires and roadworks and advertising signs dustbin and any such other obstructions should have prior warning and kerb protection. They should be placed along one continuous line along the pathway and should be of a contrasting colour from the background.

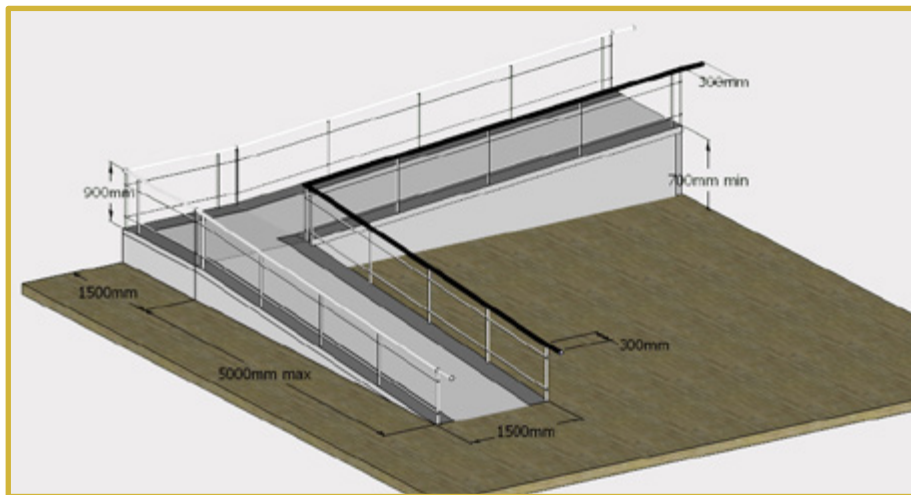


Figure 1

Ramp Specifications

Ramps should be accompanied by steps for easy access for all.

- a. The gradient should ideally be 1 in 20 and no greater than 1 in 12. Handrails on the ramps should be on both sides at two levels: upper at 850 mm- 900 mm and lower at 700 mm; both end to be rounded and grouted; extend 300 mm beyond top and bottom of ramp, adjacent to the stairs (Fig.1).
- b. Ramps should be provided with a landing of 1500 mm depth for every 9 meters distance of the ramp. The minimum width of the ramp should be 1200 mm for the ramp length of 3.6 meters; 1500mm for length between 3.6 to 9 meters and 1800 mm for lengths more than 9 meters. Surface materials should be slip resistant.
- c. The edge of the ramp should have an edge protection with a minimum height of 75 mm (Fig.3).
- d. The slope of the curb ramp shall not be more than 1:10 and the width not less than 900 mm (Fig.4).

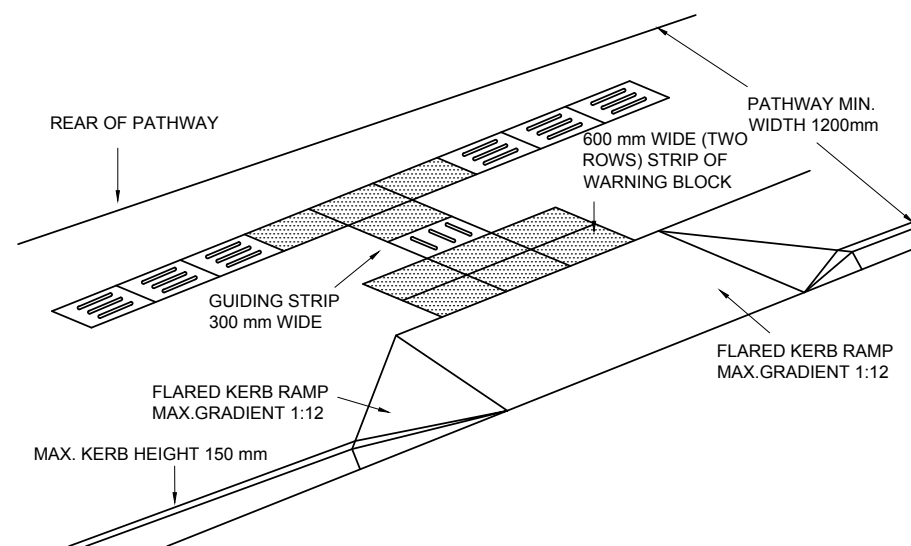


Figure 2

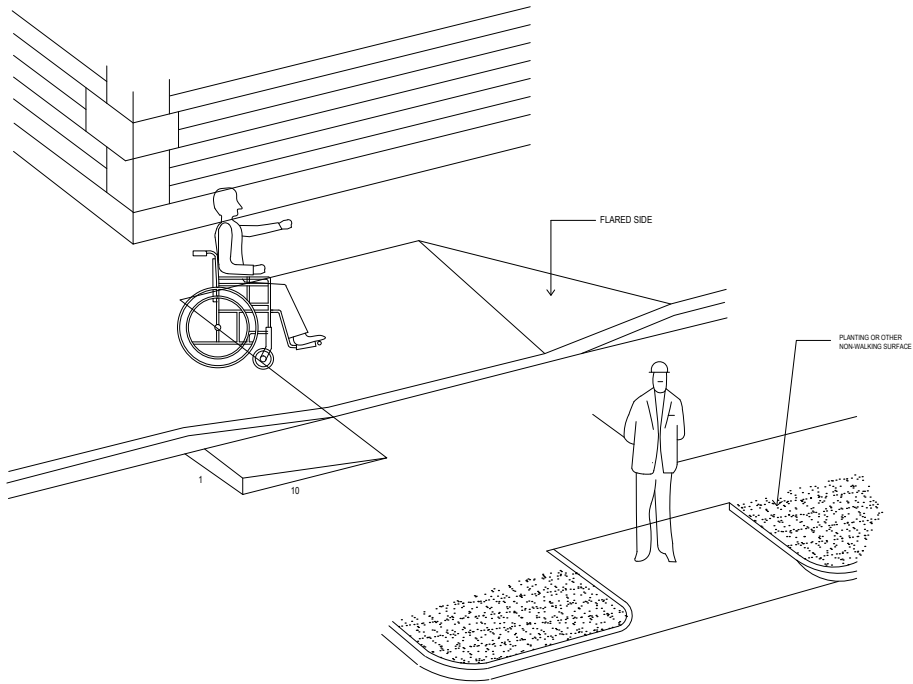
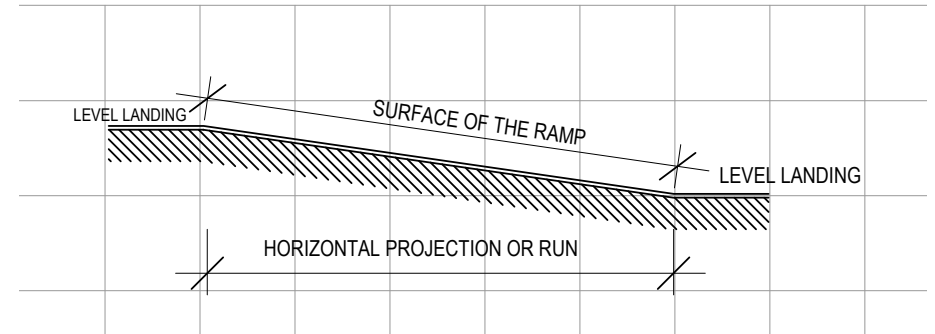


Figure 3



Maximum Slope	Maximum Length	Maximum Rise
1:20 i.e., 9%	--	--
1:16 i.e., 6%	8 mts.	0.50 mts.
1:14 i.e., 7%	5 mts.	0.35 mts.
1:12 i.e., 8%	2 mts.	0.15 mts.
1:10 i.e., 10%	1.25 mts.	0.12 mts.
1:08 i.e., 12%	0.5 mts.	0.06 mts.

Figure 5: Components of a Ramp

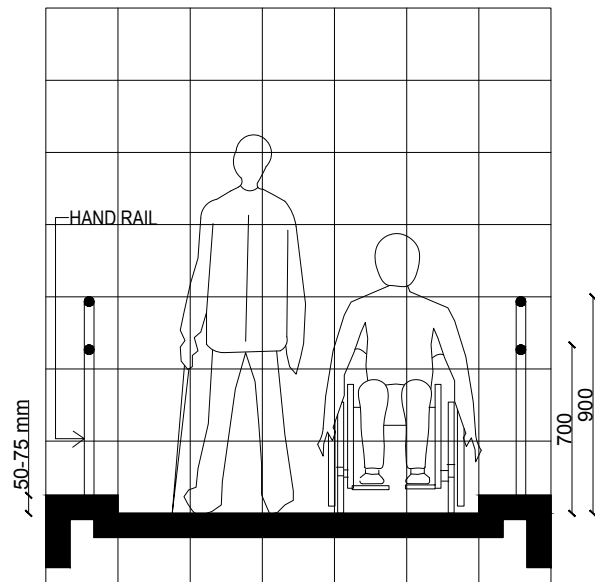


Figure 4

Signage Specifications

The following specifications should be adhered to while designing signages.

Letters and numbers on signs shall have a width-to-height ratio between 3:5 and 1:1 and a stroke width-to-height ratio between 1:5 and 1:10 (Fig.6).

Characters and numbers on signs shall be sized according to the viewing distance from which they are to be read. The smallest letter type should not be less than 15 mm. Symbols should be atleast 100 mm in height (Fig.7).

The following Sans serif fonts are recommended viz. Arial, Helvetica Medium and Futura. Usage of too many type sizes on any one sign should be avoided, along with italics or script texts.

Maps and information panels at building entrance, along roads and on public buildings should be placed at a height between 900 mm and 1800 mm. Wall mounted signs such as those indicating room numbers should be placed at a height between 1400 mm and 1600 mm from the finished floor level. Overhanging signs should allow a minimum clearance of 2000 mm to allow a visually impaired person to pass safely (Fig.8).

Raised and Brailled Characters and Pictograms: The letters and signs should preferably be raised or etched at least 1 mm from the `background, to enable sightless people to read the information using their fingers. Raised characters shall be at least 15 mm high, but not higher than 50 mm. Pictograms shall be accompanied by the equivalent verbal description placed directly below the pictogram. Illumination levels on the sign surface shall be in the 100 to 300 lux range and shall be uniform.

Finish and Contrast: Characters and symbols shall contrast with their background - either light characters on a dark background or dark characters on a light background. The commonly used colour are white, black, yellow, red blue and green, avoiding combinations of red/green and yellow/ blue for colour blind persons. The chart below recommends some colour combinations:

Background	Sign Surface	Sign Text / Symbol
Brick, dark Stone	White	Black / Blue / Green
Light Brick or Stone	Black / dark	White / Yellow
Whitewash Wall	Black / dark	White / Yellow

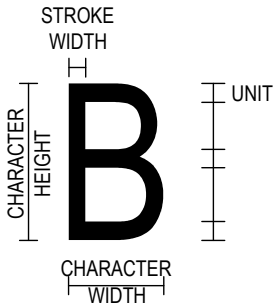


Figure 6

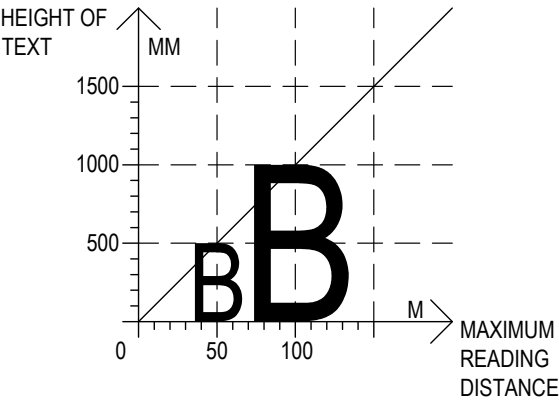


Figure 7

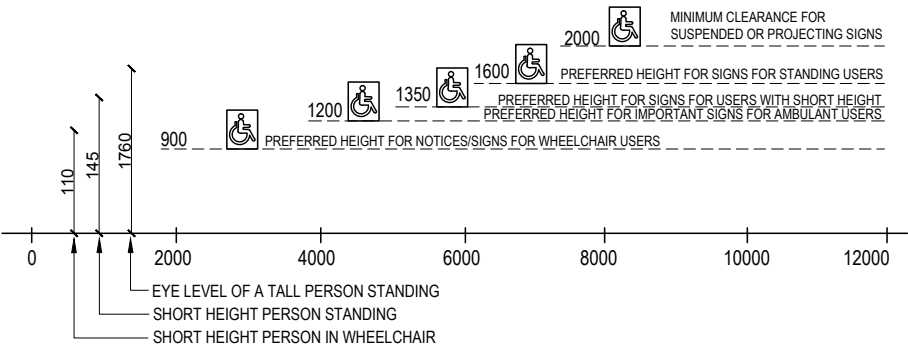


Figure 8

There are four main functional typologies into which signage could be classified:

- a. Information Signs - These include location signs, sign directories, maps for both internal and external areas for orientation of the user.
- b. Direction Signs - These signs direct the user to a destination with arrow marks aiding the text.
- c. Identification Signs - These signs installed at specific individual destinations indicate the location of a room, service, desk, etc.
- d. Warning (Safety) Signs - Signs installed for the safety of users which may be either the warning or the prohibitory type. This group would include fire exit signs, safety signs, etc. and are normally specified by ISO conventions in terms of colour, size and graphic.

The following internationally specified shapes should be followed in signboards for various signs:

Information Signboards - Rectangular

Warning Signboards - Triangular

Interdiction Signboards - Circular

Design considerations:

- a. Signage should be placed at prominent nodal positions and not be placed behind glass panels because of reflection.
- b. It should not obstruct any movement path and if suspended, should have a minimum clear head-room of 2000 mm from the finished floor.
- c. If the signage is floorbased and free-standing, then there should be a detectable barrier at the floor level for the which stick users.
- d. Signage systems should be in all the comprehensible languages of the region.
- e. Accessible spaces and facilities should be identified by the international symbol of accessibility i.e. the wheelchair figure.

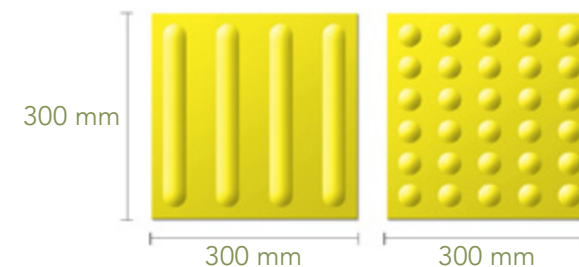
Tactile pavers: guiding & warning blocks

Tactile pavers are of two kinds – guiding and warning. They are used by people with visual impairment to walk with ease and safety.

Tactile guiding blocks (Line-type)

This block indicates a correct path/route to follow for a person with visual impairment.

- a. One/two rows of tactile guidance tiles along the entire length of the proposed accessible pathway should be installed
- b. There should be no obstacles, such as trees, poles or uneven surfaces, along the route traversed by the guidance blocks
- c. There should be clear headroom of at least 2.1 meters height above the tactile guidance blocks, free of protruding objects such as overhanging tree branches and signage, along the entire length of the walk.



Warning Blocks and Guiding Blocks

Tactile warning blocks (Dot-type)

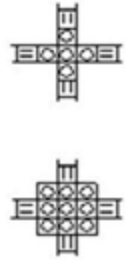
This block serves to warn people with visual impairment of an approaching potential hazard or a change in direction of the walkway (corner or junction).

Two rows of tactile warning tiles should be installed across the entire width of the designated accessible pathway, before intersections, obstacles such as trees, and each time the walkway changes direction

Warning blocks should be placed 300mm at the beginning and end of the ramps and stairs, entrance to any door.

Arrangement of guiding blocks for persons with visual impairment

EXAMPLE OF
INTERSECTION



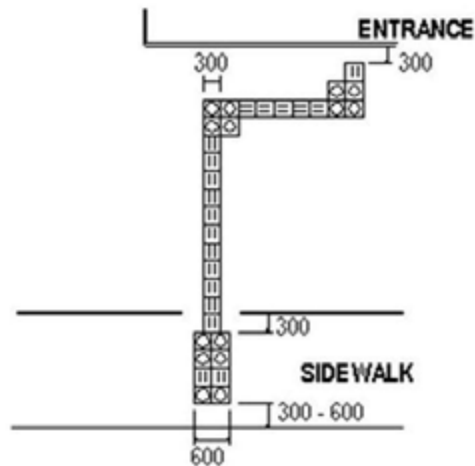
EXAMPLE OF L-SHAPED
INTERSECTION



EXAMPLE OF T-SHAPED
INTERSECTION



Guiding path and approaching
sidewalk to the building



Configuration and layout of tactile pavers: guiding and warning

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